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Monetary value of human capital disclosure for predicting future business earnings

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Orientation: Human capital (HC) is a key dimension of intellectual capital (IC) that creates shareholder value when integrated with structural capital (SC) and relational capital (RC). The disclosure of HC reveals how the human resource (HR) practices support business growth.

Research purpose: The primary focus of this study was to investigate the extent of how human capital disclosure (HCD) could predict organisational performance (expected future earnings) of the Johannesburg Stock Exchange (JSE)-listed companies.

Motivation for the study: Human capital disclosure reduces information asymmetry, predicts future business performance and improves the investors' buy-sell-hold decisions.

Research approach/design and method: A causal, comparative design was applied quantitatively in a cross-sectional survey of 150 top- and low-performing JSE-listed companies sampled based on their market capitalisation. A self-constructed disclosure index with a seven-point scoring system was developed to examine the extent of disclosure across 81 items. Subsequently, multiple regression analysis was computed to test the relationship between the dependent and independent variables.

Main findings: Human capital disclosure was associated with both the market capitalisation and book value. Overall, no mediation of human resource risk disclosure (HRRD) against organisational performance was found. Lastly, information disclosed on gender diversity yielded the interaction effect with both structural capital disclosure (SCD) and relational capital disclosure (RCD) but not with HCD.

Practical/managerial implications: Human capital disclosure identifies key HR practices that drive organisational performance and create shareholder value. This information can potentially improve benchmarking and support investor decision-making.

Contribution/value-add: The study provides a novel contribution to IC theory by demonstrating how HCD can be used to identify HR practices that leverage the monetary value of HC for business improvement.

Keywords: human capital; human capital disclosure; human resource management; intellectual capital; organisational performance.

Introduction

Human capital (HC) theory indicates minimal research focused on the disclosure of information associated with human resource (HR) practices. Whilst there is growing demand for human capital disclosure (HCD) in the financial markets, research evidence still reveals some fundamental gaps (Moloi & Adelowotan, 2019). In fact, the lack of HCD is associated with the quality and standardisation of HR information within the organisations. The collation of HR information relating to the value of HC is not standardised in many organisations (Beattie & Smith, 2010), which renders the disclosure efforts difficult, leading to information asymmetry and affecting the investor buy-sell-hold decision-making. Human capital disclosure is value relevant in the analysts' coverage reports used by investors to make their buy-sell-hold decisions (Abhayawansa & Guthrie, 2016; Orens, Aerts, & Lybaert, 2009). However, non-standardised HC information normally scattered in different parts of the annual report makes it difficult to synthesise and use for decision-making. Moloi and Adelowotan (2019) reiterated that the preparers of annual reports do not provide adequate HC information, which can be attributed to non-standardisation. Overall, HC information is non-standardised, and at times interwoven with human resource risk (HRR) information, which subsequently misrepresents, distorts and over- or underestimates the actual monetary value of HC. From an intellectual capital disclosure (ICD) point of view, information disclosed on HC together with structural capital disclosure (SCD) and relational

capital disclosure (RCD) is useful for predicting shareholder value (Abhayawansa & Guthrie, 2016). Hence, the quality of HC information as part of ICD signals how organisational design (SC) improves employees' performance towards maintaining the much required stakeholder relationships (RC).

In view of encouraging ICD, the International Financial Reporting Standards (IFRS), King IV and the International Integrated Reporting Framework (IIRF) provide the requirements as well as guidelines for disclosing non-financial information in the annual reports (Dumay, La Torre, & Farneti, 2019; Pawsey, 2017; Rinaldi, Unerman, & De Villiers, 2018). As a result, organisations in the emerging economies have made significant strides to align their reporting practices in an effort to exhibit the value relevance of HC (Melloni, 2015). Despite this, HCD still leads to information asymmetry and is consequently problematic for investor decision-making (Moloi & Adelowotan, 2019). This controversy, and the contradictory state of affairs, sets the context for this study whose purpose is to critically examine how information disclosed in HC as a component of ICD can be used to predict the expected future earnings (measured in terms of the market capitalisation and book value) of the Johannesburg Stock Exchange (JSE)-listed companies.

Literature review

Intellectual capital disclosure

According to Sullivan (1999), intellectual capital (IC) is 'the sum of an organisation's ideas, inventions, technologies, general knowledge, computer programs, designs, data skills, processes, creativity and publications' (p. 133). Dumay and Guthrie (2017) noted that IC is:

> [*T*]he sum of everything everybody in a company knows that gives it a competitive edge and it is intellectual material, knowledge, experience, intellectual property, information that can be put to use to create value. (p. 20)

Intellectual capital encompasses SC, HC and relational capital (RC) disclosed in annual reports for communicating the organisation's use of intangible assets to the investment community (Abdolmohammadi, 2005; Abhayawansa & Guthrie, 2016; Rimmel, Nielsen, & Yosano, 2009).

This concept of ICD emphasises the value relevance of intangibles in predicting the future earnings of the listed companies (Abhayawansa & Guthrie, 2016; Dumay et al., 2019; Melloni, 2015; Rinaldi et al., 2018; Whiting & Miller, 2008). To reaffirm, the disclosure of IC predicts the expected financial returns and improves investor confidence (Setia, Abhayawansa, Joshi, & Vu Huynh, 2015).

Chen and Hwang (2005) found that disclosed IC relates positively to the company's market value and predicts the company's future performance. In another study, Sang and Dennis (2014) provided evidence of the positive significant relationship between IC and the share price. Theory posits that ICD is necessary to avoid the devaluation of shares and to enhance a company's market value (Oliveira, Rodrigues, & Craig, 2006). Whilst this trend has gained traction, most IC information does not meet the criteria for mandatory disclosure in terms of IFRS or even the guidelines of integrated reporting; hence, disclosure of these intangibles is mostly voluntary (Whiting & Miller, 2008). Voluntary disclosure support the value relevance that ICD provides, in particular the monetary value of HCD. Isolating the monetary information from qualitative and quantitative disclosed patterns in the annual reports improves the predictability of ICD. Therefore, the empirical research objective (ERO) arising from this ICD discussion is presented next.

Empirical research objective 1

To critically examine how the monetary disclosure of IC is significantly associated with organisational performance (market value and book value).

Structural capital disclosure

According to Matos, Vairinhos, Dameri and Durst (2017), 'structural capital (SC) consists of the infrastructures, processes, routines and systems that enable the functioning of organisations' (p. 695). Cleary (2009, p. 38) stated that SC refers to 'the procedures, systems and routines that comprise the core of the firm'. From a resource-based view (RBV) perspective, SC enables the use of unique, inimitable and non-substitutable internal capabilities to derive business value (Singh & Rao, 2016). Structural capital represents the intangible knowledge that reduces operational costs and risk, but improves employee productivity. Investment in SC translates into high rates of tangible returns (Cleary, 2009). Structural capital allows organisations to capitalise on HC (Singh & Rao, 2016) which in turn improves key stakeholder relations (RC). When disclosed in annual reports, this information is useful for business valuation. Rimmel et al. (2009) found that SC-related information in research and development (R&D) as well as corporate culture adds value to the organisation's market capitalisation.

In terms of integrated reporting, Bini, Dainelli and Giunta (2016) supported the disclosure of business model and strategy information in annual reports, signifying the importance of non-financial information towards shareholder value creation. Structural capital disclosures enable market participants to determine the market value of publicly listed companies (Rimmel et al., 2009). Despite this plethora of literature, there is a lack of empirical studies dedicated towards examining the monetary disclosure of SC, specifically in terms of intellectual property, organisational structure and management philosophy. Against this backdrop, the ERO emanating from this SCD discussion is the following:

Empirical research objective 2

To critically examine how the monetary disclosure of SC is significantly associated with organisational performance (market value and book value).

Human capital disclosure

Human capital is about the allocation of people's skills, knowledge, abilities and experience towards business contribution. Lettau and Ludvigson (2004, p. 279) defined HC as 'the expected discounted value of future earnings measured just like the stock price captures the expected value of a future stream of dividends'. From a disclosure point of view, information on HC reflects the companies' use of effective and efficient HR practices that leverage the contribution of employees within organisations. Thus, for the purpose of this study, HCD means the extent to which the monetary information about the impact of HR practices on business growth is communicated in the annual reports. Human resource practices, including HR planning, recruitment and selection, training and development, performance management and remuneration and benefits, play a critical role in improving HC. The interplay between HR practices and HC illustrates how the organisation's configuration (of SC) can maximise employees' motivation and commitment in order to maintain customer satisfaction (RC).

Literature survey indicate that HCD is positively related to market and book value, and return on assets when moderated by the company's size and knowledge intensity (Lin, Huang, Du, & Lin, 2012). Likewise, Gamerschlag (2013) confirmed the disclosure of HC to be value relevant.

Milost (2007) supported the disclosure of HC in monetary values of opportunity, acquisition and training costs. Moreover, the market price and efficiency of HC determine the ultimate market and book value of organisations (Morris, 2015). Information on HR practices is related to the business value of organisations and attracts investor confidence (Kim, Park, Rosett, & Shin, 2017). Whilst the existing HCD literature confirm the significance of HR practices, efforts aimed at using this information from the annual reports to predict future earnings of the listed companies by integrating SCD and RCD are scarce. This necessitated the investigation of the value relevance of HC monetary information specifically in terms of HR planning, recruitment, performance management, remuneration and benefits, as well as training and development. Therefore, the ERO derived from this HCD discussion is the following:

Empirical research objective 3

To critically examine how the monetary disclosure of HC is significantly associated with organisational performance (market value and book value).

Relational capital disclosure

Relational capital (RC), also referred to as customer capital (Bontis, 2002), is intertwined with social capital and covers the organisation's relationships with multiple stakeholders, including customers, suppliers, government, financial institutions, trade unions, investors, shareholders, the media, consultants, communities and capital market participants. According to Kale, Singh and Perlmutter (2000, p. 218), RC refers to 'the level of mutual trust, respect, and friendship that arises out of close interaction at the individual level between alliance partners'. This provided the context for investigating how information disclosed on RC could predict organisational performance by also considering the impact of disclosed SC and HC. Relational capital disclosure is one of the determinants of organisational market value together with information about SC and HC (Abdolmohammadi, 2005; Abhayawansa & Guthrie, 2016).

Relational capital disclosure has a statistically significant relationship with revenue, net operating cash flow, and capital expenditure (Martini, Corvino, Doni, & Rigolini, 2016). This information reflects the company's continued efforts to align SC with the employees' HC in order to maximise business returns (Abdolmohammadi, 2005; Abhayawansa & Guthrie, 2016).

Disclosed information about customer value is associated with the company's cost of capital (Orens et al., 2009) and disclosed sales breakdown by customer and annual sales per segment or product yielded disclosure frequencies of 10.4% and 27.2%, respectively, in a study of companies listed in the Spanish Stock Exchange (Tejedo-Romero, Rodrigues, & Craig, 2017). Also, RC information, related to social responsibility and community involvement, was found to be key aspects of stakeholder engagement when disclosed in annual reports (Tejedo-Romero et al., 2017). In terms of investor relations, Kim et al. (2017) established that information disclosed on labour costs (HCD) enables analysts to develop investment solutions.

Although most of the RCD literature outlined herein indicate the integrated value of HCD, there is a lack of research examining how information disclosed on customer service, distribution channels and strategic partnerships can be used to predict the monetary value of HC towards future earnings. The following ERO emanated from this discussion:

Empirical research objective 4

To critically examine how the monetary disclosure of RC is significantly associated with organisational performance (market value and book value).

Human resource risk disclosure

Human resource risk (HRR) can be defined as those employee-related risks associated with (Meyer, Roodt & Robbins, 2011):

> [C]ompany culture, talent shortages and retention, incompetence, performance, unethical behaviour, low morale, grievances and disputes, excessive absenteeism, wellness, sabotage, workplace violence, as well as noncompliance with industry and other regulations and laws. (p. 4)

It is about predicting negative eventualities from HR management decisions. Cascio and Boudreau (2014, p. 82) defined HRR management as 'exerting control to minimise

the chance of bad outcomes'. Negative outcomes emanating from HR management decisions have dire consequences for HC and RC. This HRR-related information is useful for improving investor decision-making. However, most often, HRR and HC information is interwoven when used to understand the impact of HR practices on organisational performance. To attest, IC literature incorporates human resource risk disclosure (HRRD) into HCD for annual reporting purposes. This renders HCD insignificant to investors and shareholders.

Yet when isolated, HRR information can generate more insights regarding the negative consequences of HC allocation towards business value. Market participants consider information about employee turnover, health and safety, loyalty and retention valuable in their investment decision (Gamerschlag, 2013; Rimmel et al., 2012; Tejedo-Romero et al., 2017). Most HRR information related to strikes, grievances, job dissatisfaction and dismissals is mostly not disclosed, perhaps because of its sensitivity in the financial markets, whilst yet valuable to investors. Therefore, this current level of knowledge formed the basis for investigating the monetary value of HRRD as a mediator of the relationship between ICD and organisational performance. Mediators (intervening variables) are factors that affect the direction of the relationship between the dependent and independent variables (Preacher, Rucker, & Hayes, 2007). Based on this, the following ERO is formulated:

Empirical research objective 5

To critically examine how information disclosed on HRR mediates the relationship between disclosure of IC (SC, HC and RC) and organisational performance (market value and book value).

Board effectiveness disclosure

Board effectiveness (BE) is about examining how factors such as gender diversity, levels of education, roles and responsibilities, the number of board members and the frequency of meetings have effects on business performance and shareholder value (Tejedo-Romero et al., 2017). Many organisations disclose information on the ethnic profile of the board of directors (Abeysekera, 2010). Willows and Van Der Linde (2016) used information from the JSE-listed companies to analyse gender representation and noted that female representatives provide both tangible and intangible benefits in corporate governance that translate into organisational performance. The frequency of board meetings can improve the quality of decision-making and improves accountability.

In relation to the organisational performance, Chou, Chung and Lin (2013) confirmed that the number of board meetings is positively associated with business profitability – thus confirming the significance of board effectiveness disclosure (BED), and paving the way to investigate its moderating effect on the relationship between ICD and organisational performance. Moderating effects are imposed by variables whose variation affects the strength of a relationship between an independent and a dependent variable (Baron & Kenny, 1986). This BED discussion resulted in the following ERO:

Empirical research objective 6

To critically examine how information disclosed on BE moderates the relationship between the monetary disclosure of IC (SC, HC and RC) and organisational performance (market value and book value). Derived from this literature review (ICD, SCD, HCD, RCD, HRRD and BED) was the construction of the predictive model in Figure 1 used to critically examine the monetary value of HCD as a dimension of IC with mediation and moderation effects.

According to the model, the interplay between SCD, HCD and RCD is affected by HRRD, whilst BED influences these relationships, thereby predicting organisational performance (market capitalisation and book value). This is the premise on which the monetary value of HCD was examined in this study.

Research design

Research approach

A causal comparative design was applied quantitatively in a cross-sectional survey to compare the top- and low-performing companies listed on the JSE for the year 2015. A causal comparative research design, also referred to as ex post facto research, was applied when collecting data retrospectively from different groups (Busk, 2014). Kerlinger (1964) defined ex post facto research as:

> [*R*]esearch in which the independent variable or variables have already occurred and in which the researcher starts with the observation of a dependent variable or variables and then studies the independent variables in retrospect for their possible relations to, and effects on, the dependent variable or variables. (p. 360)

With regard to the ex post facto data collection, a disclosure index was used to quantify the information obtained from the annual reports (Rimmel et al., 2009). Urquiza, Navarro and Trombetta (2009) suggested the following regarding disclosure indexes:

1. The use of disclosure indices must be based on well-defined research objectives and the specific purpose of the measure.
2. Disclosure indices overcome the challenges of self-selection bias and subjective ratings, which may influence the validity of findings.
3. Self-constructed disclosure indices should have a reliability score above 0.60.
4. Disclosure of quantitative information can be used as a proxy for the quality of disclosure in annual reports.

Research method

In the present study, the research data were located in the corporate annual reports of 150 JSE-listed companies sampled from a total population of 396. Annual reports are

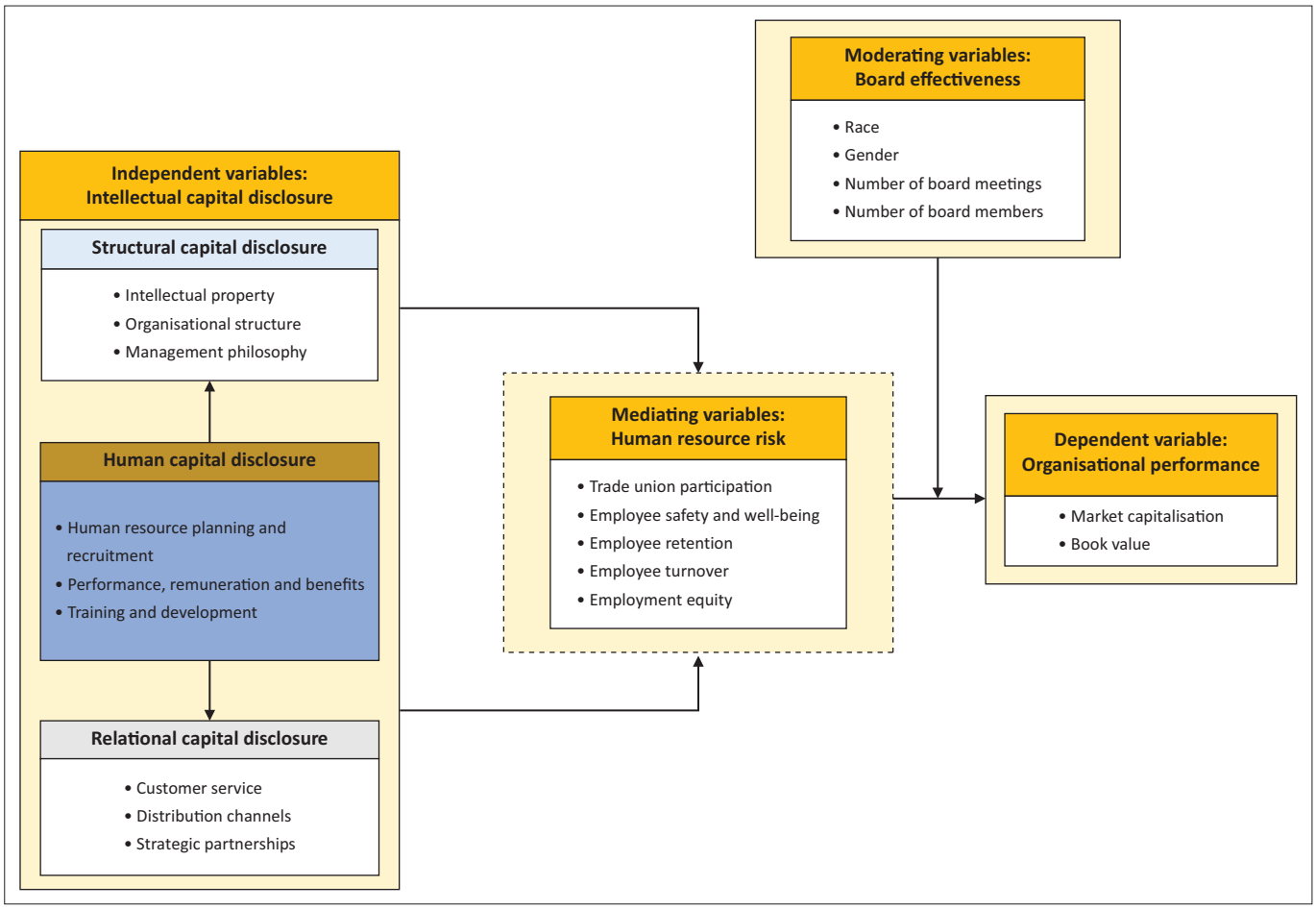


FIGURE 1: A predictive model of human capital disclosure as a dimension of intellectual capital.

arguably the most useful source of data used for measuring the disclosure of IC (Kansal & Joshi, 2015). The reports are publicly accessible and were retrieved directly from the companies' websites. On average, the top-performing (based on market capitalisation) companies' annual reports consisted of 159 pages, compared to the 102 pages of the low-performing companies. These contain the extent of ICD by the JSE-listed companies. The sampling criteria required companies to have published audited financial results (Waworuntu, Wantah, & Rusmanto, 2014).

Participants and sampling

A purposive sampling technique was applied to group the 150 companies according to their market capitalisation in order to determine the top- and low-performing companies. This technique focuses on predefined criteria where participating companies are expected to comply with the annual reporting regulations (Bowrin, 2013). As part of the criteria for inclusion, the JSE-listed companies were required to have published audited financial results in 2015. This resulted in the sample of 75 top-performing companies and 75 low-performing companies based on market capitalisation. Market capitalisation values were converted to logarithms. Similarly, Abdolmohammadi (2005) used a logarithm of the market capitalisation as a control variable for measuring ICD.

Measurement instrument

A disclosure index containing 81 items (reduced from the initial 129 items) was constructed to extract data from the annual reports. Disclosure indices are measuring instruments designed to measure the frequency of items in annual reports by using a scoring system with a predefined response scale (Diamantopoulos & Winklhofer, 2001; Ousama, Fatima, & Hafiz-Majdi, 2012; Rimmel et al., 2009; Whiting & Woodcock, 2011). Two potential approaches were considered in the construction of the disclosure index: (1) a reflective measure of homogeneous latent construct and (2) a formative index created through summative measures. In this study, the former approach was adopted based on the factor analysis and high level of internal consistency (Park, Lee, & Chae, 2017). Disclosure indices incorporate ordinal measures, allowing specific items to be assessed qualitatively and quantitatively in annual reports (Husin, Hooper, & Olesen, 2012). In this study, a seven-point scale was developed as shown in Table 1.

This scale is comprehensive for assessing the quality of information disclosed and determining the transparency of companies' annual reports (Cheung, Jiang, & Tan, 2010). The original 129 items were reduced to 81 by determining the highest mean scores of information disclosed.

TABLE 1: The seven-point intellectual capital disclosure measurement scale.

Information not disclosed	Information disclosed in qualitative terms, with less emphasis	Information disclosed in qualitative terms, with more emphasis	Information disclosed in quantitative terms	Information disclosed in combined quantitative and qualitative terms	Information disclosed in monetary values only	Information disclosed in combined monetary and qualitative terms
0	1	2	3	4	5	6

This is conducted through scale development and item analysis which yields the expected mean values (Pather & Uys, 2008) for inclusion in the final index. Accordingly, the instrument was structured as follows:

Intellectual capital disclosure dimension

The ICD dimension serves as the main construct of measurement comprising three sub-dimensions, namely, SCD, HCD and RCD. A detailed outline of these sub-dimensions is provided in the next sections before a discussion of the mediating and moderating variables. The internal consistency of the ICD construct must be above a Cronbach's alpha of 0.70 (Biscotti & D'Amico, 2016).

Structural capital disclosure dimension

The SCD dimension comprised the following three categories that contained a total of 32 items assessed by means of an ordinal response scale:

1. *Intellectual property*, which contained seven items representing information on goodwill, trademarks, R&D, innovation, brand, products and market share.
2. *Organisational structure*, which contained 10 items representing information on strategy, leadership, group structure, management structure, capital structure, capital investment, restructuring, ownership, subsidiaries and infrastructure development.
3. *Management philosophy*, which contained 15 items representing information on business growth, vision, values, culture, ethics, quality, sustainability, shareholder value, internal controls, processes, policies, procedures, systems, practices and information, communication and technology (ICT).

Husin et al. (2012) advocated the inclusion of ordinal measures in a disclosure index.

The Cronbach's alpha for measuring the disclosure of SC information is acceptable if it is above 0.70 (Biscotti & D'Amico, 2016). Information on measuring the internal consistency of each category of SC using a disclosure index could not be obtained from the literature. The reliability statistics are mostly aggregated at the dimensional level and not per item.

Human capital disclosure dimension

The HCD dimension comprised three categories with a total of 18 items measured by means of an ordinal scale and categorised as follows:

1. *Human resource planning and recruitment*, which contained seven items representing information on the headcount; acquisition of skills, knowledge, abilities and experience; as well as the importance of induction
2. *Performance, remuneration and benefits*, which contained six items representing information on salaries/wages, medical aid, retirement, individual performance and employee incentives
3. *Training and development*, which contained five items representing information on training, careers, qualifications, programmes and trainees.

Biscotti and D'Amico (2016) determined that a Cronbach's alpha above 0.70 is appropriate for measuring the aggregate constructs of the disclosure index for HC.

Relational capital disclosure dimension

The RCD dimension of this study consisted of three constructs and a total of 25 items measured by means of an ordinal response scale, as recommended by Husin et al. (2012) and the main constructs of this dimension were as follows:

1. *Customer service,* which contained seven items representing information on customers, customer needs, customer loyalty, customer retention, customer experience and customer satisfaction.
2. *Distribution channels,* which contained nine items representing information on production, pricing, sales, purchasing, supply chain, stores, delivery, marketing and advertising.
3. *Strategic partnerships,* which contained nine items representing information on relationship with stakeholders, banks, suppliers, partnerships, consultants, government and media.

Previous literature on measuring the internal consistency of each construct separately could not be obtained. The reliability statistics are mostly aggregated at the dimensional level and not per item.

Mediating variable: Human resource risk disclosure

Human resource risk disclosure contained six items related to trade union participation, safety, well-being, retention, termination and employment equity, which were assessed using an ordinal response scale. No information could be obtained from the literature on the internal consistency of the disclosure of HRR using a disclosure index. In the present study, the HRR dimension was used as a mediator of how HCD as a dimension of ICD could affect business performance. Mediation analysis examines the causal effect of the independent variable (*X*) on the dependent variable (*Y*) by accounting for the mediator (*M*) (Aguinis, 2004). Baron and Kenny (1986) assumed different causal paths feeding the dependent variable through a three-way variable system.

This cause-and-effect process assumes a direct effect ($X \rightarrow Y$) and an indirect effect ($X \rightarrow Y \rightarrow M$), as depicted in Figure 2.

In the present study, a step-by-step process was used to test the strength of the relationship between X and Y, dependent on M, with c accounting for causality, in which X exerts an indirect effect through path a x b in the effect of M on Y (Frazier, Tix, & Barron, 2004). The main condition is that X should have a significant effect c on Y, where c is closer to zero (Nitzl, Roldan, & Cepeda, 2016).

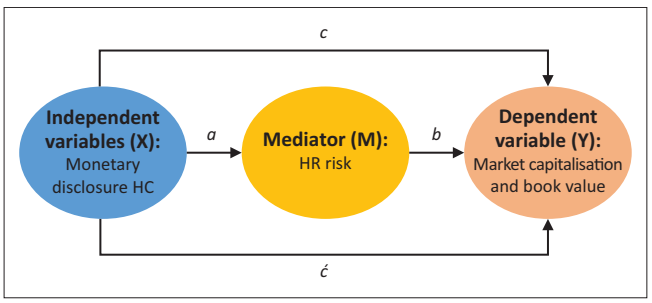
Moderating variable: Board effectiveness

The current study investigated how information disclosed on directors' race, gender as a categorical variable, number of board meetings and number of board members related to the organisational performance. Hence, organisations disclosing the effectiveness of the board in their annual reports do so in order to demonstrate the effect of their boards on shareholder value (Abeysekera, 2010). No information was found in the literature on the reliability of measures of board effectiveness in a disclosure index. This type of information is normally disclosed in frequency counts.

Outcome variable: Organisation performance

Key financial measures of interest to investors include market capitalisation, book value, sales growth, profit, return on investment (ROI), operational cash flow, economic value added, dividends per share, earnings per share and return on equity (Abdolmohammadi, 2005; De Wet, 2005). The present study used two performance measures, namely, market capitalisation and book value for investigating the impact of HCD on future business earnings. The two outcome variables were combined to obtain a composite variable used as a proxy for the overall business performance. A composite variable represents a sum of a total of two or more variables under investigation (Walkey, 1997). Logarithm values of the two main indicators were computed as follows before calculating a composite variable:

1. *Market capitalisation* converted into logarithms (*LogMarketCap*) was measured as the total value of the company as represented by the available stock of shares.



Source: Adapted from Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

HR, human resource.

FIGURE 2: Mediation analysis.

2. *Book value* converted into logarithms (*LogBookValue)* representing the difference between the company's assets and liabilities.

Research procedure

A list of companies listed on the JSE in 2015 was obtained from the Investor Relations Department of the JSE. This information was used to locate the companies' annual reports from their respective websites through the JSE portal.

Annual reports are available in the public domain (Abhayawansa & Guthrie, 2016; Whiting & Miller, 2008) and used by investors, shareholders, stakeholders, accountants, security analysts, financial directors and researchers. A dictionary of keywords and related synonyms was developed as a guide for searching specific information in the annual reports according to the disclosure index and to avoid omission. Abed, Al-Najjar and Roberts (2016) created a list of useful forward-looking keywords in a dictionary used to obtain data in the annual reports. Keywords were typed into the Adobe Acrobat – Portable Document Format (PDF) search engine inside the annual reports to electronically retrieve information on all 81 items in the disclosure index. The PDF advanced search engine was set to 'search for whole words, including bookmarks and comments'.

This function enables the electronic location of frequencies or word count, without missing important information (Brüggen, Vergauwen, & Dao, 2009). Next, searched words were captured in Microsoft Excel for all items using a score of 0, 1, 2, 3, 4, 5, or 6 to indicate the extent of disclosure. This process requires critical examination of the disclosure of information (Oliveira et al., 2006; Whiting & Miller, 2008).

Statistical analysis

The analysis of online textual data through quantitative techniques is a growing phenomenon in HR studies (Platanou, Mäkelä, Beletskiy, & Colicev, 2018). During the analysis, textual data are converted to a numeric value on a scoring scale ranging from 0 to 6. Then, any technique of quantitative data analysis can be performed (Indulska, Hovorka, & Recker, 2012).

The data were analysed using statistical package for social sciences (SPSS) Version 24.0 Software. This was carried out in three phases. Firstly, descriptive statistics were computed to summarise the characteristics of the research sample. Secondly, inter-item correlations, factor analysis and inferential statistics were conducted. Finally, multiple regression analysis was computed to test the relationship between the dependent and independent variables, taking into account the mediation and moderation effects.

Ethical considerations

The annual reports are available in the public domain and there were no ethical concerns related to confidentiality, except that the data had to be reported accurately (Thomas, 2012). In the present study, the researchers gave credit to the original authors of the literature to avoid data bias. Data bias may occur if researchers retrieve literature from popular databases instead of considering several sources (Suri, 2008). This enabled the researchers to cover a much wider literature base, including a variety of opposing views on the topic of HCD as a dimension of ICD. Also, the ethical requirements of the university were taken into consideration.

Results

The first part of the results provides the descriptive statistics of the market capitalisation, book value, ICD dimensions and HRRD derived from a total of 150 annual reports of participating companies with no missing value. All variables were factor analysed and Cronbach's alphas of ICD (0.794), SCD (0.829), HCD (0.806) and RCD (0.749) were obtained for the one-dimensional structures of each, with the HRRD reliable at 0.699. As shown in Table 2, most companies disclosed their information in qualitative terms with more emphasis, signalling less disclosure in monetary values. It has been well established that the omission of IC information increases the gap between market and book value, and may affect the company's corporate value. Moreover, companies that disclose more IC information are not only transparent, but often have higher market values compared to their counterparts. This is further elaborated briefly in the next discussion of all the ICD dimensions as well as HRRD.

Intellectual capital disclosure dimension

In critically examining how the monetary disclosure of IC is significantly associated with organisational performance (market value and book value), the results indicate that HCD was slightly higher (mean [*M*] = 2.594, standard deviation [SD] = 0.720) than the other ICD sub-dimensions, providing the market participants with information on how the HR practices create shareholder value. The low level of SCD and RCD increases information asymmetry which negatively affects investor decision-making Next, the specific items with the highest and lowest mean values are provided separately in accordance with the SCD, HCD and RCD sub-dimensions.

Structural capital disclosure dimension

In critically examining how the monetary disclosure of SC is significantly associated with organisational performance (market value and book value), the results show that most companies disclosed their *growth* plans (*M* = 4.84, SD = 1.459) in both monetary and qualitative terms by indicating the use of investments towards business expansion. This is justified by the highest information disclosed on *subsidiaries* (*M* = 5.125, SD = 1.209) also in both monetary and qualitative terms. Information disclosure on *market share* (*M* = 1.235, SD = 1.319) and *trademarks* (*M* = 1.07, SD = 0.89) was the lowest on qualitative terms with less emphasis. Based on the highest SCD, it can be deduced that the JSE-listed companies grow their businesses through investment in subsidiaries.

Human capital disclosure dimension

In terms of the critical examination of how the monetary disclosure of HC is significantly associated with organisational performance (market value and book value), disclosed information about *salaries/wages* (*M* = 4.675, SD = 2.284) and *pension benefits* (*M* = 4.05, SD = 1.833) was the highest in monetary terms. This disclosure signals compliance with the JSE listing requirements. Also, information regarding *education, training and development* (*M* = 3.365, SD = 1.804) was mostly disclosed, although in less emphasised qualitative terms. Similarly, most companies disclosed their information about the employees' *abilities* (*M* = 0.47, SD = 0.537) with less emphasised qualitative terms. This can be attributed to the lack of HR information systems that can collect, collate and translate people's intangible assets in quantitative and monetary terms.

Relational capital disclosure dimension

In critically examining how the monetary disclosure of RCD is significantly associated with organisational performance (market value and book value), information about *sales* (*M* = 5.35, SD = 0.992), strategic partnerships with *banking institutions* (*M* = 4.97, SD = 1.447) together with *customer service* (*M* = 4.14, SD = 1.652) yielded a combination of monetary and qualitative disclosure, signalling how most companies are transparent about their stakeholder relationships. However, that was not the case with information disclosed on *customer retention* (*M* = 0.28, SD = 0.650) and *advertising* (*M* = 0.86, SD = 1.407).

TABLE 2: Descriptive statistics.

Variables	Mean	Median	Mode	SD	Skewness	Kurtosis	Min	Max
MarketCap	3.489	3.492	1.29	1.392	0.035	-1.523	1.29	6.25
BookValue	2.575	2.513	4.02	0.896	0.433	-0.285	0.81	4.85
Intellectual capital disclosure (ICD)	6.930	7.038	4.13	2.042	-0.133	-0.929	2.94	11.01
Structural capital disclosure (SCD)	2.107	2.093	1.31	0.831	0.110	-0.989	0.63	3.81
Human capital disclosure (HCD)	2.594	2.694	2.06	0.720	-0.327	-0.767	0.83	3.94
Relational capital disclosure (RCD)	2.227	2.222	1.78	0.727	-0.078	-0.480	0.33	3.78
Human resource risk disclosure (HRRD)	2.023	2.083	2.50	1.007	-0.006	-0.809	0.00	4.17

SD, standard deviation.

It should be noted that low information disclosed on customer retention is a disturbing phenomenon that may have a negative effect on organisations aiming to attract investment.

Human resource risk disclosure dimension

Lastly, in critically examining how information disclosed on HRR mediates the relationship between disclosure of IC (SC, HC and RC) and organisational performance (market value and book value), it was found that only *employment equity* (M = 2.595, SD = 1.405) information was mostly disclosed in qualitative terms, whereas *trade union activity* (M = 1.41, SD = 1.577) was the least disclosed, which can be attributed to the sensitivity of sharing certain labour relations information in the public domain.

Inter-correlation of the intellectual capital disclosure constructs

As a prerequisite for mediation testing, the strength of the relationships between the constructs was assessed in order to determine the statistical significance of inter-correlations. When interpreting the effect sizes, Cohen (1988, pp. 79–81) proposed the following: small effect (r = 0.10–0.29), medium effect (r = 0.30–0.49) and large effect (r = 0.50–1.0). Table 3 presents the results of Spearman's rho.

It is evident from Table 3 that the results indicate statistically significant correlations with large effect size of the IC constructs on *market capitalisation* and the *composite indicator*. However, the effect size was small for *book value*, despite the statistically significant correlations in most cases. The results confirm the value relevance of ICD in maximising future business earnings.

TABLE 3: Correlation matrix of the four constructs of organisational performance (N = 150).

Dimensions of disclosure	Market capitalisation	Book value	Composite indicator
IC disclosure	0.70***	0.13	0.56***
SC disclosure	0.72***	0.03*	0.50***
HC disclosure	0.55***	0.16*	0.50***
RC disclosure	0.61***	0.16*	0.51***

IC, Intellectual capital; SC, Structural capital; HC, Human capital; RC, Relational capital.
Correlation is significant at: *, $p \leq 0.05$; **, $p \leq 0.01$; and ***, $p \leq 0.001$.
Correlations ranging: $0.10 \leq r \leq 0.29$ (small effect); $0.30 \leq r \leq 0.49$ (medium effect); and $0.50 \leq r \leq 1.00$ (large effect).

Regression analysis

A hierarchical multiple regression analysis was performed in accordance with the EROs of the study.

Intellectual capital disclosure towards organisational performance

Firstly, and in critically examining how the monetary disclosure of IC is significantly associated with organisational performance (market value and book value), the results showed a statistically significant relationship of ICD with *market capitalisation* ($r_{(df = 150;\ p \leq 0.001)} = 0.70$), with *book value* ($r_{(df = 150;\ p \leq 0.05)} = 0.13$) and with *composite indicator* ($r_{(df = 150;\ p \leq 0.001)} = 0.56$). Thus, ERO 1 is achieved.

Next the regression results of each ICD dimension (SCD, HCD and RCD) are presented separately.

Structural capital disclosure towards organisational performance

Table 4 presents the results of the relationship between SCD and organisational performance in terms of ERO 2.

Table 4 shows the statistically significant relationships on disclosed *goodwill* ($p \leq 0.001$; β = 0.349), *leadership* ($p \leq 0.001$; β = 0.344) and *group structure* ($p \leq 0.002$; β = 0.237) with *market capitalisation*, except *innovation* (p = 0.497; β = −0.046). This model represented 54% of the total variance (R^2 = 0.541). *Structural capital* predictors were found to be statistically insignificant in predicting *book value*. A statistically significant relationship was found for *goodwill* ($p \leq 0.013$; β = 0.223) and *leadership* ($p \leq 0.022$; β = 0.203) with *composite indicator*. The *composite indicator* model explained 26% of the total variance (R^2 = 0.256). Surprisingly, information disclosed on *innovation* was statistically insignificant for all three dependent variables. Based on these results, ERO 2 was achieved, although no statistically significant relationship was found between the SC predictors and *book value*.

Human capital disclosure towards organisational performance

Table 5 presents the results of the relationship between HCD and organisational performance in terms of ERO 3.

TABLE 4: Multiple regression of structural capital and organisational performance (N = 150).

Predictors	Unstandardised coefficients		Standardised coefficients			Collinearity statistics	
	B	SEB	*B*	*t*	*p*	Tol	VIF
SC disclosure to market capitalisation†							
Goodwill	0.401	0.079	0.349	5.048	0.001***	0.661	1.513
Leadership	0.444	0.089	0.344	5.003	0.001***	0.667	1.499
Group structure	0.314	0.098	0.237	3.199	0.002**	0.576	1.735
SC disclosure to composite ranking‡							
Goodwill	11.585	4.587	0.223	2.526	0.013*	0.661	1.513
Leadership	11.902	5.130	0.203	2.320	0.022*	0.667	1.499

B, unstandardised coefficient and constant for linear regression equation; SC, structural capital; SEB, standard error of B; β, standardised regression coefficient; *t*, measure of the difference in variation of sample size; R^2, coefficient of determination; ΔR^2, adjusted coefficient of determination; Tol, tolerance; VIF, variance inflation factor.
*, significant at $p \leq 0.05$; **, significant at $p \leq 0.01$; ***, significant at $p \leq 0.001$; †, R = 0.736, R^2 = 0.541; and ‡, R = 0.506, R^2 = 0.256.

TABLE 5: Multiple regression of human capital and organisational performance (N = 150).

Predictors	Unstandardised coefficients		Standardised coefficients			Collinearity statistics	
	B	SEB	β	*t*	*p*	Tol	VIF
HC disclosure to market capitalisation†							
Employees	0.459	0.097	0.406	4.712	0.001***	0.853	1.173
Recruitment	0.301	0.104	0.229	2.906	0.004**	0.624	1.604
HC disclosure on book value‡							
Employees	0.224	0.072	0.308	3.135	0.002**	0.624	1.604
Knowledge	-0.392	0.123	-0.297	-3.188	0.002**	0.694	1.440
HC disclosure on composite ranking§							
Employees	22.878	4.494	0.446	5.091	0.001***	0.624	1.604
Recruitment	14.203	4.774	0.239	2.975	0.003**	0.743	1.346

B, unstandardised coefficient and constant for linear regression equation; HC, human capital; SEB, standard error of B; β, standardised regression coefficient; *t*, measure of the difference in variation of sample size; R^2 coefficient of determination; ΔR^2, adjusted coefficient of determination; Tol, tolerance; VIF, variance inflation factor.

*, significant at $p \leq 0.05$; **, significant at $p \leq 0.01$; ***, significant at $p \leq 0.001$; †, $R = 0.736$, $R^2 = 0.542$; ‡, $R = 0.370$, $R^2 = 0.137$; and §, $R = 0.561$, $R^2 = 0.315$.

TABLE 6: Multiple regression of relational capital and organisational performance (N = 150).

Predictors	Unstandardised coefficients		Standardised coefficients			Collinearity statistics	
	B	SEB	β	*t*	*p*	Tol	VIF
RC disclosure to market capitalisation†							
Customers	0.593	0.073	0.547	8.149	0.001***	0.715	1.399
Customer experience	-0.194	0.074	-0.167	-2.630	0.009**	0.798	1.254
Services	0.196	0.090	0.139	2.187	0.030*	0.801	1.248
Production	0.310	0.084	0.242	3.673	0.001***	0.741	1.350
RC disclosure on book value‡							
Customer loyalty	0.162	0.064	0.219	2.525	0.013*	0.852	1.174
Customer satisfaction	0.175	0.076	0.201	2.309	0.022*	0.842	1.188
RC disclosure on composite ranking§							
Customer loyalty	10.460	3.866	0.201	2.706	0.008**	0.910	1.099
Production	11.136	4.618	0.192	2.411	0.017*	0.715	1.399

B, unstandardised coefficient and constant for linear regression equation; RC, relational capital; SEB, standard error of B; β, standardised regression coefficient; *t*, measure of the difference in variation of sample size; R^2, coefficient of determination; ΔR^2, adjusted coefficient of determination; Tol, tolerance; VIF, variance inflation factor.

*, significant at $p \leq 0.05$; **, significant at $p \leq 0.01$; ***, significant at $p \leq 0.001$; †, $R = 0.739$, $R^2 = 0.546$; ‡, $R = 0.317$, $R^2 = 0.100$; and §, $R = 0.581$, $R^2 = 0.338$.

Table 5 shows statistically significant association between disclosed *number of employees* ($p \leq 0.001$; β = 0.406) and *recruitment* ($p \leq 0.004$; β = 0.229) with *market capitalisation* in the first model. This regression model explained 34% the total variance (R^2 = 0.338). In the second model, the disclosure of *number of employees* had a stronger positive statistically significant association with *book value* ($p \leq 0.002$; β = 0.308) than *knowledge*, with a slightly weaker association ($p \leq 0.001$; β = −0.297). This model explained 14% of the total variance (R^2 = 0.137).

In the last model, *number of employees* ($p \leq 0.001$; β = 0.446) and *recruitment* ($p \leq 0.003$; β = 0.239) were statistically significantly related to *composite indicator*. This model explained 31% of the total variance (R^2 = 0.315). Therefore, ERO 3 was achieved.

Relational capital disclosure towards organisational performance

Table 6 presents the results of the relationship between RCD and organisational performance in terms of ERO 4.

Table 6 shows statistically significant association of disclosed *number of customers* ($p \leq 0.001$; β = 0.547), *customer experience* with slightly weaker association ($p \leq 0.009$; β = −0.167), *customer service* ($p \leq 0.030$; β = 0.139) and *production* ($p \leq 0.001$; β = 0.242) with *market capitalisation*. This regression model explained 55% of the total variance (R^2 = 0.546). In the second model, only *customer loyalty* ($p \leq 0.013$; β = 0.219) and *customer satisfaction* ($p \leq 0.022$; β = 0.201) had a positive statistically significant association with *book value*, with this model explaining 100% of the total variance (R^2 = 0.100). In the third model, disclosed *number of customers* ($p \leq 0.001$; β = 0.359), *customer loyalty* ($p \leq 0.008$; β = 0.201) and *production* ($p \leq 0.017$; β = 0.192) were statistically significantly related to *composite indicator*. This model explained 34% of the total variance (R^2 = 0.338).

Mediating effect of Human resource risk disclosure on intellectual capital disclosure towards organisational performance

Further tests were carried out for examining the effect of HRRD on the relationship between ICD and organisational performance and Table 7 presents the results in terms of ERO 2.

Table 7 indicates statistically significant indirect mediation between ICD and *market capitalisation* with a Sobel test (Z = 3.186; p = 0.001). No other indirect mediation relationships were accounted for. As a result, the data only supported the mediation effect of HRR between IC and *market capitalisation*.

Moderating effect of board effectiveness on the relationship between intellectual capital disclosure and organisational performance

In terms of the moderating effect of the board's effectiveness on the relationship between ICD and organisational performance, the findings revealed two cases of moderation:

TABLE 7: Regression coefficients of mediation relationships between the intellectual capital dimensions and market capitalisation, controlling for human resource risk disclosure.

Path relationship	R^2	ΔR^2	Unstandardised regression coefficients		Standardised coefficients			Sobel test
			B	SEB	β	*t*	*p*	*Z*-score
Market capitalisation								
Path c	0.71	0.54	0.48	0.04	0.70	12.2	0.001	3.186
Path a			0.31	0.03	0.64	10.2	0.001	
Path b			-0.34	0.10	-0.24	-3.35	0.001	
Path ć	0.73		0.59	0.05	0.86	11.8	0.001	

Note: *t*-values of paths c, a and *ć* were significant at $p \leq 0.001$ level.

B, unstandardised coefficient and constant for linear regression equation; SEB, standard error of B; β, standardised regression coefficient; *p*, probability value; R^2, coefficient of determination; ΔR^2, adjusted coefficient of determination.

gender diversity moderated the relationship between *SCD* and *RCD* with *organisational performance*.

Discussion

This study critically examined how the disclosure of IC, including SC, HC and RC, can be used to predict the future earnings of the JSE-listed companies by considering HRR as a mediator and board effectiveness as a moderator of the underlying relationships. No study investigating the interplay between these relationships could be located. The discussion section is presented according to the EROs of the study.

Empirical research objective 1

To critically examine how the monetary disclosure of IC is significantly associated with organisational performance (market value and book value).

Intellectual capital was defined in the literature as the company's knowledge that accumulates through the interface between people's competencies with internal processes in creating customer value, and in order to maximise business returns (Dumay & Guthrie, 2017). Most literature in developed countries account for ICD in their annual reports for bridging the gap between market and book value (Chen et al., 2005; Dumay et al., 2019; Rinaldi et al., 2018; Sang & Dennis, 2014), but no study could be found in the South African context where the disclosure of IC was investigated as a predictor of organisational performance using HRRD as a mediator and board effectiveness as a moderator. Overall, this study addresses the current gap in the ICD literature by examining how mediation and moderation influences SCD, HCD and RCD towards organisational performance (market and book value).

The voluntary disclosure of IC information was confirmed as value relevant in enhancing investor confidence (Gamerschlag, 2013). Therefore, ERO 1 is achieved.

Empirical research objective 2

To critically examine how the monetary disclosure of SC is significantly associated with organisational performance (market value and book value).

Literature confirms the significance of SCD pertaining to companies' internal infrastructure, processes, routines and ICT on shareholder value creation (Cleary, 2009; Matos et al., 2017; Singh & Rao, 2016). However, the theory does not provide evidence of how the information disclosed on SCD could serve as a predictor of organisational performance in the South African context by considering mediation and moderation. Instead, most research focused on the role of SC in the organisation, but not the effect of disclosed monetary information on predicting business earnings. The findings indicate that the disclosure of SC mostly affect the market capitalisation of the JSE-listed companies with less effect on their book value. As previously determined, SC disclosure signifies pivotal business drivers that enhance organisational performance (Rimmel et al., 2009). Thus, ERO 2 is achieved.

Empirical research objective 3

To critically examine how the monetary disclosure of HC is significantly associated with organisational performance (market value and book value).

Human capital theory emphasises the link between investments made in people development and business outcomes. Human capital concerns the management and measurement of people's competencies in line with business objectives in order to maximise future returns. Thus, the lack of HCD (Tejedo-Romero et al., 2017) indicated a gap in HC theory, which the present study sought to address. The extent of HC disclosure found in the study in terms of the number of employees, recruitment processes and knowledge signals people's contribution towards business performance. Specifically when disclosed in monetary terms, HC disclosure tends to attract investor confidence and leverage business value (Milost, 2007; Morris, 2015). Thus, ERO 3 is achieved.

Empirical research objective 4

To critically examine how the monetary disclosure of RCD is significantly associated with organisational performance (market value and book value).

Relational capital is about determining the relationships of an organisation with partners in both its internal and external environment (Kale et al., 2000). It is through such relationships that the company can improve customer service and

effectively manage distribution channels. Whilst the literature provides evidence of the importance of RC in business growth, no evidence was found on how the extent of RCD could predict organisational performance by considering the disclosed monetary value. Thus, the current study found that RCD on the number of customers, customer service, production, customer loyalty and customer satisfaction indicates a general association with market capitalisation, book value and composite. Relational capital illustrates the importance of stakeholder relations in maximising shareholder value (Abdolmohammadi, 2005; Abhayawansa & Guthrie, 2016). Therefore, ERO 4 is achieved.

Empirical research objective 5

To critically examine how information disclosed on HRR mediates the relationship between disclosure of IC (SC, HC and RC) and organisational performance (market value and book value).

Existing research provides substantial evidence of the negative impact of HR risks on the business (Cascio & Boudreau, 2014; Meyer et al., 2011). However, no evidence was found in the literature where HRRD was used as a mediator in the relationship between disclosure of IC and organisational performance. In the present study, HRR was found not to have an indirect relationship with SCD, HCD and RCD. However, HRRD influenced the relationship between ICD and market capitalisation. This result confirms the importance of disclosing more HRR information in order to reduce information asymmetry in the financial markets. Thus, ERO 5 is achieved.

Empirical research objective 6

To critically examine how information disclosed on BE moderates the relationship between the monetary disclosure of IC (SC, HC and RC) and organisational performance (market value and book value).

Tejedo-Romero et al. (2017) confirmed the importance of board effectiveness on business performance. There is a lack of evidence where race, gender diversity, number of board meetings and size of the board were used as moderators of the relationship between ICD and organisational performance in South Africa.

The current study found a moderating effect of gender diversity on the relationship between SCD, RCD and organisational performance, signalling the importance of equality in the board of directors. Finally, this study confirms the importance of disclosing the voluntary information on IC, including SCD, HCD and RCD in order to reduce information asymmetry in the financial market for enabling investors' buy-sell-hold decision-making. Thus, ERO 6 is achieved.

Practical implications

The findings of this study indicate how the disclosure index can be used for assessing the extent of voluntary disclosure in the annual reports. Voluntary disclosure is receiving attention and encourages organisations to become more transparent with their non-financial information for reducing the cost of capital and enhancing investor confidence. When disclosed, HC information aids in diagnosing key HR practices that add business value. Also, HR practitioners can use IC information in the annual reports to align the people strategy with the expected business outcomes in order to leverage future earnings. Lastly, less information disclosed in IC presents the market participants with limitations to perform accurate business valuation. Therefore, this study presented evidence on the key aspects of HC that predict market value of the JSE-listed companies in South Africa by considering SC, RC, HRR and BE.

Limitations of the research

This study showed that less information disclosed on HRR affects the mediation between ICD and business performance. The pattern of changes in the disclosure of IC could not be examined because of the cross-sectional nature of the study. This could be achieved through a longitudinal study. Also, the extent of disclosure was calculated by using the unweighted method, which only indicated the presence of items being disclosed in annual reports and not the quality of disclosure.

No distinction was drawn between the type of mandatory and voluntary disclosure of IC. A methodological limitation may be that the author (researcher) completed the rating of annual reports (without cross-validation by other researchers or assessors). This is an area of further research.

Recommendations and suggestions for future research

Organisations can use IC information in annual reports to identify the key value drivers that grow the business. In particular, HCD is useful in integrating business and HR strategy. Hence, HCD must be improved in order to reduce the gap between the market capitalisation and book value, as well as to avoid information symmetry between management and investors. Furthermore, the findings provide the usefulness of HCD in integrated reporting. This information can subsequently be used by the financial analysts to generate investor coverage reports that incorporate employee-related information necessary for investment decisions. Lastly, future research can be undertaken by using the measurement instrument (disclosure index) for examining the quality of integrated reporting towards shareholder value creation.

Conclusion

The findings of this study demonstrate the significance of disclosing information on IC for improving organisational performance. Literature surveyed revealed the multifaceted nature of SCD, HCD and RCD, which culminated in the development of a disclosure index. The index containing a list of predefined items was used to collect data from the annual reports of 150 top- and low-performing companies listed on the JSE for examining the extent to which ICD is

associated with the market capitalisation and book value (predictors of the expected future earnings). The findings revealed some key underlying relationships, although the book value had the weakest association with most of the information disclosed. This gap was previously reported in the literature, and confirms the need for more voluntary disclosure in non-financial information.

Furthermore, the study tested the mediating effect of HRRD on the relationship between the dependent and independent variables. It was subsequently found that HRRD does not affect these relationships, except for the interaction between ICD and market capitalisation. The moderating effect of race, gender diversity, the number of board meetings and board members on the interaction between ICD and organisational performance was critically examined. Two cases of moderation were detected: (1) gender diversity moderated the relationship between the disclosure of SC and organisational performance and (2) gender moderated the relationship between RCD and organisational performance. The study contributes to the ongoing research promoting the disclosure of non-financial information through integrated reporting for creating shareholder value. Therefore, all the EROs of the study were achieved.

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The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this research article.

Authors' contribution

M.D.M., G.R. and G.v.Z. contributed equally to this research article.

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