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Explaining the effective variables in measuring intellectual capital and providing the optimal model

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Abstract

The purpose of this research is to investigate and explain the effective variables in measuring intellectual capital and to provide an optimal model. This research is developmental in terms of its purpose, analytical-correlational in terms of the type of method, qualitative in terms of the method of collecting data, and with a meta-composite approach in terms of the method of conducting the research. The statistical population of the research includes all studies and researches done in the past in the field of intellectual capital. In two parts in this research; descriptive and inferential meta-analysis, the analysis of the intellectual capital of the researches published in the period of 1366 to 1399, extracted from the Irandoc database, in the number of 51 studies (102 variables - including repeated variables, finally 53 variables) was analyzed. Based on the descriptive meta-analysis, the classification of intellectual capital research were categorized into three categories of organizational focus, the focus of intellectual capital accounting literature, and the research methods used in the research. Also, based on the criteria of concentration of accounting literature, intellectual capital research was divided into five categories: audit, accountability and governance, management control/strategy, performance measurement, and others (including the public). Inferential meta-analysis was performed using stata software. Based on the results of inferential meta-analysis, the relationship between intellectual capital components and financial performance components was examined. The results showed that based on the pattern of random effects, the average effect size extracted from the research is equal to 0.269.

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Extended Abstract

Introduction

Intellectual capital is the most important source for sustainable competitive advantages of organizations, and today one of the important responsibilities of managers is better management of intellectual capital (Bani Asadi et al, 2021). Intellectual capital is the most basic asset of an organization, and in a knowledge-oriented society, intellectual capital is used to create value for the organization, and organizational success depends on the ability to manage these assets. Intellectual capital is defined as a set of intangible assets, resources, and competitive abilities that are obtained from organizational performance and value creation (Montazeri et al, 2022). Intellectual capital includes all processes and assets that are not usually shown on the balance sheet, and also includes all intangible assets (such as trademarks, product patents and business names) that are considered in modern accounting methods (Nowrouzi et al., 2017). Intellectual capital is a capital beyond physical and tangible assets. Today, intellectual capital can play an important role in creating added value due to the production of knowledge and information and as a result the production of wealth in the knowledge-based economy (Asgarnezhad Nouri & Emkani, 2017). Intellectual capital is a language for thinking, speaking, and taking actions related to the organization's future revenue drivers, which include relationships with customers and partners, innovation efforts, organizational infrastructure, and knowledge and skills of the organization's employees. As a concept, intellectual capital is associated with techniques that empower managers to strengthen management (Zareian Moradabadi et al, 2022). Therefore, according to the issues raised, the current research intends to answer the question: how to explain the effective variables in measuring intellectual capital and provide the optimal model?

Theoretical Framework

Intellectual Capital

Intellectual capital is capabilities, knowledge, culture, process strategy, intellectual assets, and communication networks that create value and competitive advantage for the organization, and help the organization achieve its goals (Mahmoudi et al, 2021). Intellectual capital is defined as a general set of abilities, information, culture, strategy, trends, and relational networks of an organization that have created a value or competitive improvements and help the organization to achieve its goals. Broking defines intellectual capital as the market assets of human assets, the axis of intellectual assets and sub-structural assets, and believes that when these assets are combined with other production resources of the organization, it leads to the creation of value. Most of the studies conducted on intellectual capital have concluded that intellectual capital consists of three types of capital, which include: human capital, structural capital, and relational (customer) capital (Farazmand et al, 2019).

Zareian Moradabadi et al, (2022) investigated the model of intellectual capital evaluation in the state banks of the Islamic Republic of Iran. The results showed that intellectual capital has 4 components and 48 sub-components. The results of structural equation modeling showed that the effect coefficients of all sub-factors and variables (the four dimensions of the intellectual capital evaluation model, including human, structural, relational, and innovation capital) are significant and higher than 5.00, and also their significance levels are higher than 96.1. Therefore, the evaluation model of intellectual capital as a valid and reliable tool has the ability to be used for better management of intellectual capital.

Olarewaju & Msomi (2021) investigated the intellectual capital and financial performance of the development of South African public insurance companies, the impact of intellectual capital on financial performance for the period 2008 to 2019. The findings showed that there is a significant and direct relationship between asset yields of the previous period, intellectual

capital, and the financial performance of insurers in the South African Development Association. Except for intellectual capital components; human capital components and structural capital have a direct and significant relationship with the asset yields, while capital employed has an inverse and non-significant relationship with asset yields. The risk-control variables are policy issue, insurer size, and leverage; all of which inversely and significantly affect asset yields. Therefore, there is a U-shaped relationship between intellectual capital and financial performance in public insurance companies in the South African Development Association. Therefore, policy makers and insurance managers should maximize their intellectual capital because it creates a competitive advantage that leads to improved financial performance and wealth generation.

Research methodology

This research is developmental in terms of its purpose, analytical-correlational in terms of the type of method, qualitative in terms of the method of collecting data, and with a meta-composite approach in terms of the method of conducting the research. The statistical population of the research includes all studies and researches done in the past in the field of intellectual capital. In two parts in this research; descriptive and inferential meta-analysis, the analysis of the intellectual capital of the researches published in the period of 1366 to 1399, extracted from the Irandoc database, in the number of 51 studies (102 variables - including repeated variables, finally 53 variables) was analyzed.

Research findings

Based on the descriptive meta-analysis, the classification of intellectual capital research were categorized into three categories of organizational focus, the focus of intellectual capital accounting literature, and the research methods used in the research. Also, based on the criteria of concentration of accounting literature, intellectual capital research was divided into five categories: audit, accountability and governance, management control/strategy, performance measurement, and others (including the public). Inferential meta-analysis was performed using stata software. Based on the results of inferential meta-analysis, the relationship between intellectual capital components and financial performance components was examined. The results showed that based on the pattern of random effects, the average effect size extracted from the research is equal to 0.269.

Conclusion

The current research was conducted with the aim of investigating and explaining the effective variables in measuring intellectual capital and providing an optimal model. According to the obtained results, the current research is in line with the results of Zareian Moradabadi et al, (2022), Olarewaju & Msomi (2021), Bani Asadi et al, (2021), Farazmand et al, (2019), Kamath (2019), Francesco Gangi et al, (2019), Ghadir & Shihap Mohammad (2019), Hapsah & Imbarine et al, (2019), and Soetanto & Liem (2019). Bani Asadi et al, (2021) showed that there are 863 researches in the field of intellectual capital, at the end of which 112 researches were selected and by analyzing their content, the relevant dimensions and codes were extracted and the importance and priority of each was determined using Shannon's entropy method. Based on the findings of the research, the organization's image and reputation codes, organizational procedures, patents, customer loyalty, employee creativity, and the organization's training programs for employees have the highest coefficient of importance among the three dimensions of intellectual capital. Finally, after going through the research steps, a comprehensive model of intellectual capital was presented in three dimensions of human capital, structural capital, and relational capital.

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In relation to the factors related to corporate governance, there are factors related to intellectual capital, managerial ownership, institutional investors, independence of the board of directors, corporate ownership, and board of directors' compensation. Therefore, it is suggested to improve the intellectual capital by choosing optimal approaches from each of the above factors, for example, by increasing the amount of the board of directors' bonus, the motivation of the managers can be increased, or by increasing the independence of the board of directors, or by increasing the institutional ownership etc. improved intellectual capital. It is important to mention that the above factors are important in measuring intellectual capital and the intellectual capital of any organization can be measured using all these factors.