

DOI: [10.55643/fcaptop.3.50.2023.4045](https://doi.org/10.55643/fcaptop.3.50.2023.4045)

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Received: 02/04/2023

Accepted: 11/05/2023

Published: 30/06/2023

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ANALYTICAL PROCEDURES OF THE AUDIT OF INTEGRATED REPORTING OF CORPORATE ENTERPRISES

ABSTRACT

The purpose of the article is to develop a system of analytical indicators that characterize the efficiency of capital use of corporate enterprises to assess the implementation of their development strategy, which can be used by independent auditors when verifying integrated reporting.

The methodological basis of the analytical procedures of the audit of integrated reporting is a comparative analysis of the actually achieved performance indicators, which best present the results of the activities of corporate enterprises in the context of the prospects of using capital components to increase value with previously established indicators or previously achieved indicators. When substantiating the system of analytical indicators that are used in the audit of integrated reporting of corporate enterprises, we proceeded from the components of capital that form the value of a corporate enterprise.

For the first time, a system of analytical indicators was developed to assess the efficiency of the components of various types of capital that form the value of corporate enterprise during an independent audit of integrated reporting. To ensure the transparency of the results of the evaluation of the efficiency of the use of capital, this system should not simply act as a collection of the main evaluation coefficients but embody a vision of the strategy of increasing the value of the enterprise, confirmed by cause-and-effect relationships.

The practical value of the scientific research lies in the fact that the results obtained by the authors will contribute to the assessment of the effectiveness of the use of various types of capital during the audit of the integrated reporting of corporate enterprises. The use of analytical assessment in the implementation of independent assessment of integrated reporting of corporate enterprises expands the goals and tasks of auditors, and therefore, the need to improve their competencies both directly in conducting analytical assessment and in establishing signs of reliability of data for the application of analytical procedures increases. This will be useful when applying professional judgment when deciding on the selection of alternative sources of information and identifying signs of data manipulation in the integrated reporting of a corporate enterprise.

Keywords: analytical procedures, assessment, capital, audit, integrated reporting, corporate enterprises

JEL Classification: M41, M42

INTRODUCTION

The volatility of economic trends puts forward new requirements for audit objects. Integrated reporting is the most demanded object of audit in modern conditions. The audit of integrated reporting is a new phenomenon both in science and in practice, caused by the urgent need to carry out audits of integrated reporting indicators by independent auditors.

International auditing standards (hereinafter ISA) recommend using analytical procedures in the auditors' activities in order to strengthen the argumentation of audit evidence of the reliability of integrated reporting and in order to form a reasonable audit

opinion on the effectiveness of using the components of the enterprise's capital when creating new value (competitive advantages). An analytical procedure means evaluations of the enterprise's activities, as a consequence of causal relationships among both financial and non-financial data. It also means performing analytical procedures according to standard algorithms to form analytical conclusions.

The normative regulation of analytical procedures application in the auditor's activities when verifying reporting indicators (including integrated ones) is regulated by ISA 520 "Analytical procedures", ISA 570 "Going concern", ISA 315 "Identifying and assessing the risks of material misstatement through understanding the entity and its environment".

In particular, ISA 520 defines analytical procedures as evaluations of financial information through analysis of plausible relationships among both financial and non-financial data. Analytical procedures also encompass such investigation as is necessary of identified fluctuations or relationships that are inconsistent with other relevant information or that differ from expected values by a significant amount [1].

ISA 570 "Going Concern" insists that in the process of generating audit evidence to confirm compliance with the going concern principle, there is an urgent need for an adequate assessment of the prospects for the development of the enterprise, confirmed by appropriate analytical calculations [1].

When assembling audit evidence as required by ISA 570 "Going Concern" the auditor shall assess whether the entity's ability to continue as a going concern is confirmed by appropriate analytical calculations [1].

ISA 315 "Identifying and assessing the risks of material misstatement through understanding the entity and its environment" determines when assembling audit evidence, the auditor shall obtain an understanding of the entity and its environment both external and internal; industry factors; the nature of business operations and financial performance of the entity. Analytical procedures may help identify the existence of unusual transactions or events, and amounts, ratios, and trends that might indicate matters that have audit implications [1, § A15].

LITERATURE REVIEW

Study of certain aspects of the auditor's use of analytical procedures when forming an overall conclusion on the financial statements are currently of interest to an increasing number of researchers and practitioners both domestic and foreign as: D.A.A. Al-Laban, H.J. Alhassany, M.A.J. Abas [2], D.A., Appelbaum and M.A., Vasarhelyi [3], H., Bashyrova [4], A. Ježovita, B. Tušek and L. Žager [5], O.V., Karpachova [6], A.K. Matrood, D.N. Abd Alrazaq and N.S. Khilkhal [7], O.V., Nazarenko [8], Müller, W., Kuznetsova, A., Khrystoforova, O., Karpachova O., & Sulyma, M. [9], A.M. Rose, J.M. Rose, I. Suh, J.C. Thibodeau [10].

In its turn, the capital components included in the International Integrated Reporting Framework (hereinafter IRF) [11] are also the object of increased scientific interest. In particular, the scientific works of I. Berzhanir [12], A. Nesterenko [13], A. Nikolaeva and I.V. Aleksandrenko [14] are devoted to the analysis of financial capital. The components of manufactured capital in the format of integrated reporting were considered by M. Dombi [15] and T. Kaminskaya [16]. The analysis of intellectual capital in the context of the effectiveness of managing its components was carried out by N. Daud, F. Noordin and I. Osman [17], G. Melloni [18], V. Semenov [19]. The effectiveness of the use of human capital of corporate enterprises was studied in works by T. Davydyuk, N. Malyuga [20], K. Tsurai [21], T. Yildiz, U. Arslan and Y. Selikoz Saglam [22]. The essence of social and relationship capital and its characterizing indicators were disclosed in publications R. Skrinkovsky [23], I. Zhigley [24], Yu.I. Suh [25], N. Humphrey [26], R. Dymchek, O. Shpikulyak, M. Gritsaenko, O. Sakovskaya and G. Gritsaenko [27]. Studies of natural capital in the context of IRF were carried out by I. Zamula [28], J.R.R. Alavalapati and T. Ochuodho [29], M. Prodanchuk, Yu. Bezduzhnaya, A. Mikhalkov, N. Shevchuk and A. Popova [30]. At the same time, despite the existence of scientific developments on the components of the capital of an enterprise included in the IRF and significant practical experience in using analytical assessment in the verification of financial statements, analytical tools for auditing integrated reporting of corporate enterprises have been not sufficiently developed, and analytical procedures have not been established.

Under these circumstances, the goals and objectives of the auditor are expanding, which means that the need to improve its competencies both directly in conducting an analytical assessment and in establishing signs of data reliability for the application of analytical procedures increases. In particular, the inability to apply professional judgment during the selection of alternative sources of information origin and identification of signs of data manipulation in the integrated reporting of the enterprise.

Based on the essence of integrated reporting and the task of auditors to verify its indicators, are considered that an analytical assessment should ensure the establishment of causal relationships between financial and non-financial information about the activities of the enterprise and the identification of inconsistencies in the prospects for the use of its capital components.

AIMS AND OBJECTIVES

The purpose of the article is to develop an integrated approach of assessing the components of the capital of corporate enterprises in their integrated reporting. This includes the substantiation of the system of analytical indicators characterizing the efficiency of capital use, the formalization of their calculation and the standardization of analytical procedures that can be used by independent auditors when verifying integrated reporting.

METHODS

During the research, the following methods were used: analysis and synthesis to study the relationship of analytical indicators in the integrated reporting of foreign and domestic corporate enterprises; theoretical generalization and grouping to determine the composition of performance indicators that characterize the corresponding types of capital mortgaged in the IRF; comparison during the analytical assessment of the actually achieved performance indicators with their indicators; systematization for the development of recommendations for the calculation of analytical indicators characterizing the efficiency of the capital use of corporate enterprises; logical generalization of results when formulating conclusions and proposals.

RESULTS

The practical implementation of an integrated approach to assessing the components of the capital of corporate enterprises in the audit of their integrated reporting includes the following steps:

- determination of the composition of evaluating indicators characterizing the efficiency of the components' capital use of corporate enterprises;
- formalization of the calculation of these characteristics;
- disclosure of the methodology for the formation of indicators (limit values) of evaluating indicators;
- standardization of analytical procedures aimed at comprehensively emerging patterns of the entity's capital components in accordance with the requirements of the IRF.

The practice of corporate reporting of Ukrainian and foreign enterprises is presented in Table 1. As we have shown above in Table 1, there is a small set of evaluating indicators, disparate by purpose, do not reveal the nature of the relationship between the types of capital declared in the IRF, and also do not fully assess the effectiveness of the enterprise value increase strategy.

Table 1. Analytical indicators presented in the integrated reporting of Ukrainian and foreign corporate enterprises, characterizing the effectiveness of the use of capital components. (Source: systematized by the authors based on [31, 32])

N	Analytical indicators	Ukrainian corporate enterprises					Foreign corporate enterprises					% of the total number of enterprises
		PRJSC "MHP"	JSC Ukrainian Railways	DTEK LLC	NJSC Naftogaz	BDO LLC	Bosch Group	Philips	SAP	Vancity	Vodacom	
Indicators characterizing financial capital												
1	Return on sales based on EBITDA, %	-	+	+	+	-	+	+	+	+	+	80
2	Current liquidity ratio, k	-	-	-	+	-	+	+	+	+	+	60
3	Return on invested capital (ROIC), %	-	-	-	+	-	+	+	+	+	+	60
4	Return on equity, Equity ratio, (ROE), %	-	-	-	-	-	+	+	+	+	+	50
5	Debt to equity ratio ("risk ratio"), k	-	-	-	-	-	+	-	+	+	+	40
6	Earnings per share (EPS), UAH/share	-	-	-	-	-	+	+	+	-	+	40
7	Return on assets (ROA), %	-	-	-	-	-	+	-	-	+	+	30
8	Days sales outstanding (DSO), days	-	-	-	-	-	+	-	+	-	+	30
9	Total shareholder return, (TSR), %	-	-	-	-	-	-	+	-	+	-	20
Indicators characterizing manufactured capital												
1	Capacity utilization factor, k	+	-	+	+	-	+	+	-	-	-	50
Indicators characterizing intellectual capital												
-		-	-	-	-	-	-	-	-	-	-	0
Indicators characterizing human capital												
1	Lost time injury frequency rate (LTIFR), k	+	+	+	+	-	-	-	-	-	+	50
2	Employee Turnover Rate, k	-	+	+	+	+	-	-	-	-	-	40
Indicators characterizing social and relationship capital												
-		-	-	-	-	-	-	-	-	-	-	0
Indicators characterizing natural capital												
-		-	-	-	-	-	-	-	-	-	-	0

In support of this conclusion, an analytical assessment was carried out of the capital components of two enterprises which characterized by the greatest branching of analytical indicators presented in their integrated reports [31; 32]: NJSC Naftogaz (Ukraine - production and transit of oil and gas) and Vodacom Corporation (South Africa - mobile communication services). The results of the analytical assessment are demonstrated in Table 2.

Table 2. Analytical assessment of the capital components of corporate enterprises based on their integrated reporting for 2020-2021.
(Source: generated by the authors based on [31, 32])

N	Indicators	NJSC Naftogaz			Vodacom Corporation		
		2020 Year	2021 Year	Deviation	2020 Year	2021 Year	Deviation
Indicators characterizing financial capital							
1	Return on sales based on EBITDA, %	10.8	21.2	+10.4	41.4	40.0	-1.4
2	Current liquidity ratio, k	3.0	2.7	-0.3	1.2	1.2	0
3	Return on invested capital, %	(3.2)	3.9	+7.1	20.6	19.5	-1.1
4	Return on equity, Equity ratio, %	-	-	-	17.9	18.4	+0.5
5	Debt to equity ratio ("risk ratio"), k	-	-	-	0.84	0.95	+0.11
6	Earnings per share (EPS), EUR/share	-	-	-	8.5	8.25	-0.25
7	Return on assets (ROA), %	-	-	-	8.9	9.9	+1.0
8	Days sales outstanding (DSO), days	-	-	-	83	82	-1
Indicators characterizing manufactured capital							
9	Capacity utilization factor, k	0.78	0.8	+0.02	-	-	-
Indicators characterizing human capital							
10	Lost time injury frequency rate (LTIFR), k	0.41	0.47	+0.06	0.05	0.03	-0.02
11	Employee Turnover Rate, k	0.15	0.2	+0.05	-	-	-

An in-depth analysis of indicators presented in the corporate reporting of the studied enterprises and summarized in Table 2 indicates the lack of standardization for certain types of capital. In particular, to assess the components of financial capital, NJSC Naftogaz provides only three indicators that characterize the return on equity and liquidity of assets, while Vodacom Corporation offers 8 indicators.

To assess the manufactured capital, NJSC Naftogaz uses one indicator, while the Vodacom Corporation does not provide such information at all.

The assessment of human capital in NJSC Naftogaz can be carried out according to two indicators that reveal the level of injuries and Employee Turnover Rate, while Vodacom Corporation provides information only for calculating the level of injuries. As for social, intellectual and natural capital, both NJSC Naftogaz and Vodacom Corporation do not provide information to assess the effectiveness of its use.

If we talk about the efficiency of the use of financial capital, the Vodacom Corporation in 2021 has significantly higher profitability rates compared to NJSC Naftogaz. In particular, the return on sales of the Vodacom Corporation in 2021 exceeds the same indicator achieved by NJSC Naftogaz increased by 2 times (40% vs. 21.2%), and the return on invested capital by Vodacom is higher than that of NJSC Naftogaz in 5 times (19.5% vs. 3.9%).

As for the quality of the assets owned by the studied companies, in 2021 the liquidity of the assets of NJSC Naftogaz is more than 2 times higher than the liquidity of the assets of the Vodacom Corporation since the current liquidity ratio of these enterprises is 2.7 and 1.2 respectively.

Furthermore, attention should be paid to the high level of the Debt to equity ratio (risk ratio), which in 2021 at Vodacom Corporation increased by 11 percentage points compared to the previous year and amounted to 0.95. This indicates a high dependence of the enterprise on attracted sources of financing and a decrease in the financial stability of the enterprise. By the way, NJSC Naftogaz does not provide this indicator in its corporate reporting.

Despite the more extensive range of indicators characterizing the financial capital of the Vodacom Corporation and their higher values compared to the indicators of NJSC Naftogaz, it should be noted that Vodacom has a downward trend, while NJSC Naftogaz has an upward trend compared to the data of 2020. This indicates a decrease in the efficiency of the use of financial capital in the Vodacom Corporation, in contrast to NJSC Naftogaz.

When assessing the use of human capital, it is noteworthy that the level of injury frequency at NJSC Naftogaz is almost 16 times higher than that of the Vodacom Corporation and is 0.47 and 0.03, respectively, in 2021. Furthermore, NJSC Naftogaz has an upward trend in this indicator, while Vodacom Corporation has a downward trend. The inefficient use of human capital in NJSC Naftogaz is also evidenced by a rather high rate of staff turnover, which tends to grow.

Thus, it can be stated that carried out in Table 2 analysis has the character of a fragmentary assessment of the effectiveness of the use of capital components, which makes it difficult to form a reliable and objective auditor's opinion on the achievement of the strategic goals of corporate enterprises for increase competitive advantages (values).

To address these challenges, first of all, it is necessary to justify the system of analytical indicators based on the components of capital that can be used in the audit of integrated reporting. At the same time, it must be remembered that in order to ensure the transparency of the results of assessing the effectiveness of the use of capital, the system of analytical indicators should not be just a collection of the main evaluating coefficients, but the embodiment of a strategy for increasing the value of the enterprise, confirmed by causal relationships.

We consider that the composition of indicators characterizing the efficiency of the use of certain types of capital can be variable and range from 5 to 8 coefficients. When choosing them, the following rules should be guided:

- firstly, these indicators should provide a comprehensive assessment of the effectiveness of the use of various types of capital and be calculated according to integrated reporting data;
- secondly, they must be comparable for different sizes of enterprises, that is, they must be represented by coefficients;
- thirdly, they should make it possible to determine the efficiency of capital use for a number of periods within the same enterprise, a separate type of economic activity or a region;
- fourthly, their list should not contain indicators that lose their economic meaning in the Ukrainian business environment.

According to paragraph 2.15 IRF, financial, manufactured, intellectual, human, social, relationship and natural capital are associated with the creation of value [11].

In particular, financial capital is a reserve of funds that: 1) is in the organization for use in the production of goods or services; 2) is received through financings, such as debt, equity or grants, or obtained through operations or investments [11, p. 2.15].

In other words, financial capital is associated with the company's own and borrowed sources of financing. As a result, the creation of value associated with the efficient use of financial capital can be assessed by the coefficients of financial stability and profitability (profitability).

Analyzing the data in Table 1, we conclude that Ukrainian and foreign corporate enterprises use the following indicators to assess financial capital: return on sales, return on invested capital, current liquidity ratio, earnings per share, return on assets, etc.

In particular, return on sales based on EBITDA is used to assess the effectiveness of financial capital by 80% of the studied corporate enterprises. The current liquidity ratio and return on invested capital are presented in the statements of 60% of the studied enterprises. Return on equity as a priority indicator for assessing the effectiveness of financial capital is used by 50% of the enterprises under research, while 40% of the studied enterprises use income (profit) per share and the ratio of borrowed and own funds (financial risk ratio) as indicators for assessing the effectiveness of financial capital.

Return on assets and receivables turnover, which are used by 30% of the enterprises under study are the least popular indicators for evaluating the effectiveness of financial capital, as well as return on investment of shareholders, which are cited in their corporate reporting by only 20% of respondents. We believe that this is due to the low information content of these indicators from the standpoint of the efficiency of the use of financial capital since they are only clarifying.

Instead, it should be highlighted indicators that are not reflected in the integrated reporting of the studied enterprises, however, in our opinion, are important in assessing the effectiveness of financial capital. We are talking about the ratio of provision with own working capital and the ratio of accounts receivable and accounts payable, characterizing the sources of filling and the efficiency of using the working capital of the enterprise.

Based on these considerations, we offer the following list of indicators that auditors can use when assessing the efficiency of using the financial capital of integrated reporting corporate enterprises (Table 3).

Table 3. The composition and procedure for calculating analytical indicators characterizing the efficiency of using the financial capital of corporate enterprises.

N	Analytical indicators for financial capital assessing	Purpose	Calculation formula
1	Return on sales based on EBITDA (Earnings before interest, taxes, depreciation and amortization), %	This measure provides insight into how much profit is being produced per hryvnia of sales	$\frac{\text{EBITDA}}{\text{net sales}} = \frac{\text{Operating Profit} + \text{depreCiation}}{\text{Net sales}} \times 100$
2	ROIC (Return on investment capital), %	Represents the rate of return a company makes on the cash it invests in its business	$\frac{\text{Operating Profit}}{\text{Average cost of equity} + \text{average cost of long - term liabilities}} \times 100$
3	ROE (Return on equity), %	Allows to estimate what share of net income falls on each hryvnia invested in assets by the owners of the enterprise	$\frac{\text{Net income}}{\text{Average cost of Shareholders' equity}} \times 100$
4	EPS (Earnings per Share)	Indicates what share of net income falls on each share	$\frac{\text{Net income}}{\text{Weighted Average Shares Outstanding}}$
5	Debt to equity ratio ("risk ratio"), k	Allows to estimate what part of the debt funds falls on one monetary unit of own resources	$\frac{\text{Average company's total liabilities}}{\text{Average company's total shareholders' equity}}$
6	Working capital ratio	Allows to evaluate what share of equity is invested in current assets	$\frac{\text{Equity} - \text{non} - \text{current assets}}{\text{Current Liabilities}}$
7	The ratio of receivables and payables	Allows to estimate what share of commodity receivables falls on one monetary unit of commodity accounts payable, that is, due to which the working capital of the enterprise is filled	$\frac{\text{Average trade receivables}}{\text{Average trade payables}}$
8	Current Ratio	Allows to estimate how many monetary units in current assets account for one monetary unit in current liabilities	$\frac{\text{Average current assets}}{\text{Average current liabilities}}$

Manufactured capital is productive physical objects (as opposed to natural physical objects) owned by an organization for the production of goods or the provision of services, including 1) buildings; 2) equipment; 3) infrastructure (for example, roads, ports, bridges, water treatment facilities) [11, p. 2.15].

That is, manufactured capital is associated with the production capacity of the enterprise, embodied in its fixed assets. The efficiency of the use of production capacities can be assessed by such indicators as the depreciation rate, the renewal rate, the retirement rate, the fixed asset turnover ratio, the return on assets (turnover ratio of fixed assets), etc.

At the same time, an analysis of the practice of assessing manufactured capital as part of the integrated reporting of both domestic and foreign corporate enterprises presented in Table 1 indicates that only the installed capacity utilization factor is used for this purpose, which was noted in 60% reporting of the studied corporate enterprises.

Such a simplified analytical toolkit significantly limits the auditor's ability to confirm the reliability of integrated reporting. An expansion of the set of indicators to assess the efficiency of the use of manufactured capital is required.

We believe that the most reasonable for assessing the efficiency of the use of manufactured capital will be the range of indicators that characterize the production stability of the enterprise and determine its competitive advantages associated with the ownership of labour tools. The composition of such indicators and the method of their calculation are presented in Table 4.

Table 4. The composition and procedure for calculating analytical indicators characterizing the efficiency of using the manufactured capital of corporate enterprises.

N	Analytical indicators for manufactured capital assessing	Purpose	Calculation formula
1	Capacity Utilization Factor	Allows to assess what proportion of the available capacity is actually used in the implementation of the current activities of the enterprise	$\frac{\text{Actual use of production capacity}}{\text{Available Plant Capacity}}$
2	The depreciation rate of production fixed assets	Allows to estimate how much of the original cost of fixed assets is already depreciated	$\frac{\text{Depreciation of production fixed assets}}{\text{The initial cost of fixed assets}}$
3	Fixed asset renewal ratio	Allows to estimate the share of the initial cost of fixed assets put into operation in the reporting period in the amount of the initial cost of fixed assets at the end of the reporting period.	$\frac{\text{The initial cost of production fixed assets received in the reporting period}}{\text{The initial cost of production fixed assets at the end of the reporting period}}$
4	The fixed asset turnover ratio, %	Allows to determine the share of profit in each hryvnia invested in fixed assets	$\frac{\text{Net income}}{\text{Average cost of production fixed assets}} \times 100$
5	Return on assets (turnover ratio of fixed assets)	Allows to estimate how much net income from sales falls on the hryvnia invested in production fixed assets	$\frac{\text{Net sales}}{\text{the average balance in fixed assets}}$

Intellectual capital - knowledge-based organizational intangible assets, including: 1) intellectual property such as patents, copyrights, software, rights and licenses; 2) "organizational capital", such as knowledge, systems, procedures and protocols [11, p. 2.15].

Justifying the indicators for evaluating the efficiency of using intellectual capital, we faced the problem of their complete absence in the corporate reporting of the enterprises under study (Table 1).

Apparently, this situation can be explained by two reasons:

- firstly, the low prevalence of the practice of reflecting the components of intellectual capital in integrated reporting;
- secondly, the lack of a methodology for the analytical assessment of the components of intellectual capital at the business entities level.

Consequently, when choosing indicators for assessing the effectiveness of using the intellectual capital of corporate enterprises, the scientific search was focused on the study of both domestic and foreign sources characterizing the indicators for assessing the management of the components of intellectual capital.

Generalization of opinions [17; 18; 19; 33; 34], allowed us to identify a number of coefficients that, from our point of view, can be applied by auditors in assessing the efficiency of using the intellectual capital according to the integrated reporting of corporate enterprises. The composition of these coefficients and the method of their calculation are presented in Table 5.

N	Analytical indicators for intellectual capital assessing	Purpose	Calculation formula
1	The coefficient of the knowledge intensity of production	Allows to estimate what share of research and development costs falls on each hryvnia of production costs	$\frac{\text{R\&D expenses}}{\text{Production costs}}$
2	Technology upgrade rate	Allows to evaluate the share of the latest technologies in the total number of technological processes of the enterprise	$\frac{\text{Number of implemented latest technological processes}}{\text{Total number of technological processes}}$
3	The share of investments in research and development in the total volume of investments	Allows to evaluate the share of investment in research and development in the total investment of the enterprise	$\frac{\text{R\&D investments}}{\text{Total Investment}}$
4	Number of new patented objects of intellectual property rights	Allows to estimate the share of new objects in the composition of patented intellectual property rights	$\frac{\text{New patented objects}}{\text{Total number of patented objects of intellectual property rights at the end of the reporting period}}$
5	Return on innovative products, %	Allows to determine the share of profit in each hryvnia of income from the sale of innovative products	$\frac{\text{Operating profit of innovative activity}}{\text{Net income of innovative activity}} \times 100$

Human capital is the competencies of employees, their abilities and experience, as well as their motivation to innovate, including 1) compliance with the organization's governance structure and its support, risk management approach and moral values; 2) the ability to understand, develop and implement the strategy of the organization; 3) loyalty and motivation to improve processes, goods and services, including their ability to manage and cooperate [11, p. 2.15].

Taking into account the nature of the components of human capital, indicators for evaluating the effectiveness of its use should include 1) coefficients characterizing the interest of personnel in increasing the competitive advantages of the enterprise (loyalty); 2) coefficients characterizing the level of staff motivation, including satisfaction with working conditions; 3) coefficients characterizing the level of professional development of personnel.

Instead, as part of the integrated reporting indicators of the enterprises under study (Table 1), the efficiency of using human capital is presented only by indicators that characterize the level of staff satisfaction with working conditions (Employee Turnover Rate and Lost time injury frequency rate).

In particular, the Lost time injury frequency rate is presented in the integrated reports of 50% of the studied corporate enterprises, and the employee turnover rate is observed in 40% of the integrated reports.

Without denying the informativeness of the presented coefficients, we consider it expedient to expand their composition with indicators characterizing the level of professional development of personnel and their loyalty to the enterprise. The composition of such indicators and the method of their calculation are presented in Table 6.

Table 6. The composition and procedure for calculating analytical indicators characterizing the efficiency of using the human capital of corporate enterprises.

N	Analytical indicators for human capital assessing	Purpose	Calculation formula
Coefficients characterizing the interest of personnel in increasing the competitive advantages of the enterprise (loyalty)			
1	The level of creative activity of staff	Allows to evaluate the share of employees with rationalization abilities in the composition of the personnel of the enterprise	$\frac{\text{The number of employees who made a rational proposal, invention or received a patent during the year, pers}}{\text{Average number of full – time employees, pers.}}$
2	Return on labour, ROL	Allows to estimate the amount of profit attributable to one working person	$\frac{\text{Net income}}{\text{verage number of employees}}$
3	Labour productivity	Allows to evaluate the average labour efficiency of the production personnel of the enterprise	$\frac{\text{The cost of selling manufactured products}}{\text{Total production time}}$
Coefficients characterizing the level of staff motivation, including satisfaction with working conditions			
4	The level of expenses for the "social" package (social guarantees) of personnel	Allows to evaluate the share of expenses allocated by the enterprise to ensure social guarantees for personnel in the total amount of expenses incurred	$\frac{\text{The social guarantees expenses}}{\text{Total expenses of the enterprise}}$
5	Lost time injury frequency rate, LTIFR	Allows to determine the proportion of employees who received an industrial injury or occupational disease in the total number of employees of the enterprise	$\frac{\text{Number of injured during the reporting period}}{\text{Average number of employees}}$
6	Employee Turnover Rate	Allows to estimate the share of employees who are not satisfied with working conditions in the total number of full-time employees	$\frac{\text{Number of resignations}}{\text{Average number of full – time employees}}$
Coefficients characterizing the level of professional development of personnel			
7	Staff Development Cost Ratio	Allows to estimate the share of expenses allocated by the enterprise for staff training in the total amount of incurred expenses	$\frac{\text{Expenses of staff development}}{\text{Total expenses of the enterprise}}$
8	Personnel development factor	Allows to assess what part of training events of a professional nature falls on the average number of staff	$\frac{\text{Number of study programs, trainings}}{\text{Average number of full – time employees}}$

Social and relationship capital is institutions and relationships within and between communities, between stakeholder groups and other groups, as well as the ability to share information to enhance individual and collective well-being [11, 2.15].

That is, it is capital aimed at the implementation of social projects, charity, and conscientious fulfilment of tax obligations to the state, as well as building up other types of competitive advantages of a reputational nature.

Considering that the nature of integrated reporting information in the context of social and relationship activities of corporate enterprises is very diverse and is mainly descriptive, it is rather difficult to determine the indicators that most fully characterize the effectiveness of social and relationship capital. Therefore, it is quite logical that none of the studied corporate enterprises indicated in Table 1 does not provide indicators to assess the economic effect of the social orientation of their activities.

Therefore, we will use the scientific developments of foreign and domestic authors who have studied certain aspects of social and relationship capital. Critical reconsideration of opinions [23; 24; 25; 26; 27], made it possible to single out two groups of coefficients that can be applied by auditors when assessing the effectiveness of the use of social and relationship capital according to the integrated reporting of corporate enterprises.

The first group includes coefficients characterizing the efficiency of the use of social capital, which includes the following indicators:

- the level of payment of taxes and fees to the budget, which determines the degree of conscientiousness of the enterprise in paying taxes to the budget and other national funds;
- coefficient of current social expenses, which characterizes one-time charitable payments made by the enterprise;
- coefficient of capital social expenditures, which determines the level of investments directed to large-scale social projects (for example, the construction of schools, stadiums, squares, etc.).

The second group includes coefficients characterizing the effectiveness of the use of relationship capital, which includes the following indicators:

market share, indicating which market segment the company owns and determines its competitiveness against the background of other participants in this market;

the share of new products and new customers in sales revenue, which determines the competitive advantages of the enterprise in capturing the preferences of new customers.

The composition of these coefficients and the method of their calculation are presented in Table 7.

Table 7. The composition and procedure for calculating analytical indicators characterizing the efficiency of using the social and relationship capital of corporate enterprises.

N	Analytical indicators for social and relationship capital assessing	Purpose	Calculation formula
Coefficients characterizing the efficiency of using the social capital			
1	Payment of taxes and fees to the budget	Allows to estimate what part of the income from sales is directed to the payment of taxes and fees	$\frac{\text{The amount of taxes paid for the reporting period}}{\text{Net sales}}$
2	Current social expenses ratio	Allows to evaluate the share of income from sales directed to one-time social expenses	$\frac{\text{Amount of current social expenses}}{\text{Net sales}}$
3	Capital social expenses ratio	Allows to estimate what share of the income from sales is directed in the form of capital investments in social projects	$\frac{\text{The amount of capital investment in social projects}}{\text{Net sales}}$
Coefficients characterizing the effectiveness of relationship capital			
4	Market share	Allows to evaluate the share of the enterprise in the total market of its goods and services	$\frac{\text{The volume of sales of products by the enterprise}}{\text{The total volume of products that are on the market}}$
5	Share of new products and new customers in sales revenue	Allows to assess what share of sales revenue comes from new products, whether it comes from new customers	$\frac{\text{Income from new products and customers}}{\text{The total amount of income from sales}}$

Natural capital is all renewable and non-renewable natural resources and processes that enable the creation of goods or services that support the past, present or future prosperity of an organization. It includes 1) air, water, land, minerals and forests; 2) biological diversity and ecosystem health [11, p. 2.15].

Thus, the assessment of the effectiveness of using natural capital should be based on indicators of rational consumption of natural resources.

Despite the fact that among the surveyed respondents, no company in its corporate reporting presented indicators that allow evaluating the effectiveness of the use of natural capital (Table 1), in domestic and foreign scientific sources [28; 29] there are a number of coefficients that, in our opinion, are applicable in the audit of integrated reporting of corporate enterprises.

These coefficients may be segregated into two groups:

- coefficients characterizing the resource intensity of production: energy intensity of production; specific share of water consumption; resource return;
- coefficients characterizing the effectiveness of environmental protection measures to preserve the ecosystem: coefficient of the intensity of emissions into the atmospheric air; coefficient of the intensity of discharges into water resources; waste generation intensity factor; profitability of environmental activities.

The composition of these coefficients and the method of their calculation are presented in Table 8.

As noted, the audit evaluation of integrated reporting indicators requires not only the calculation of the actual values of the coefficients characterizing the efficiency of the use of capital components of corporate enterprises but also their comparison with the established reference values (indicators). The lack of indicators for evaluating capital components makes it impossible to compare indicators of integrated reporting by types of activity, regions and countries, and the assessment is reduced only to determining the trend of their change over a number of periods. This significantly reduces the reliability of the audit report on the efficiency of using the components of the capital of a corporate enterprise when it comes to assessing the competitiveness of domestic economic entities in world economic markets.

Table 8. The composition and procedure for calculating analytical indicators characterizing the efficiency of using the natural capital of corporate enterprises.

N	Analytical indicators for natural capital assessing	Purpose	Calculation formula
Coefficients characterizing the resource intensity of production			
1	Energy intensity of production	Allows to estimate how much energy was consumed to obtain 1 UAH of net income from the sale of products (goods, works, services)	$\frac{\text{Cost of the energy consumption}}{\text{Net sales}}$
2	The weighted proportion of water consumption	Allows to estimate the cost of consumed water per 1 UAH of net income from the sale of products (goods, works, services)	$\frac{\text{Cost of water consumption}}{\text{Net sales}}$
3	Resource productivity	Allows to estimate the amount of income from the sale received from a unit of spent natural capital	$\frac{\text{Net sales}}{\text{Cost of used natural resources}}$
Coefficients characterizing the effectiveness of environmental protection measures			
4	Emission intensity factor for air	Allows to estimate the volume of emissions in the implementation of economic activities to obtain 1 UAH of net income from the sale of products (goods, works, services)	$\frac{\text{The amount of emissions in the atmosphere}}{\text{Net sales}}$
5	Emissions to water resources	Allows to estimate the volume of discharges into water features in the course of economic activity in order to receive 1 hryvnia of net income from the sale of products (goods, works, services)	$\frac{\text{The volume of discharges into water features}}{\text{Net sales}}$
6	The factor of waste generation	Allows to estimate the volume of waste generation in the course of economic activity in order to receive 1 UAH of net income from the sale of products (goods, works, services)	$\frac{\text{The volume of waste generation}}{\text{Net sales}}$
7	Return on environmental activities	Allows to estimate the size of the obtained effect (result) from the implementation of environmental measures, attributable to 1 hryvnia of expenses incurred for environmental protection measures	$\frac{\text{Result from the implementation of environmental measures}}{\text{Costs for the implementation of environmental measures}} \times 100$

Therefore, the choice of methodology for forming indicators is becoming increasingly important. We believe that when setting reference (limit) values, it is advisable to be guided by the following rules:

- for financial indicators of a productive nature, one should choose their industry average values that most accurately take into account the specifics of enterprises of a certain type of economic activity or average standard values;
- for non-financial indicators, as well as financial indicators for which it is impossible to establish normative or industry average values, a benchmarking approach should be applied to their justification.

And finally, the introduction of an integrated approach to the assessment of capital components in the integrated reporting of corporate enterprises actualizes the need for standardization of analytical procedures for such an assessment.

The methodological basis of these analytical procedures is a comparative analysis of the actually achieved indicators of the efficiency of the use of capital components, carried out in three interrelated areas:

- comparison with their limit values (comparison with expected results);
- comparison with previous periods;
- comparison in sectoral and regional contexts.

Without pretending to be perfect, we believe that the proposed comprehensive approach to the analytical assessment of capital components will methodologically expand the auditor's tools and will strengthen the argumentation of audit evidence of the reliability of integrated reporting of corporate enterprises.

DISCUSSION AND CONCLUSION

The conducted research allows us to formulate a number of generalizing provisions on the application of analytical procedures for assessing capital components in the verification of integrated reporting indicators by an independent auditor, namely:

1. A necessary condition and public requirement is to confirm the reliability of integrated reporting by conducting an independent audit. To strengthen audit evidence, it is important to analyze the components of capital that form the value of the enterprise and are reflected in its integrated reporting.
2. The use of analytical assessment actualizes the need to form a set of analytical procedures aimed at: 1) comparison of actually achieved indicators of the efficiency of capital use with their marginal values (comparison with expected results); 2) comparison of indicators with previous periods; 3) comparison of information in the context of industry and regional data.
3. The core element of these analytical procedures is a system of analytical indicators for evaluating the effectiveness of capital components that form the value of a corporate enterprise. To ensure the transparency of the results of assessing the effectiveness of the use of capital, this system should not just be a collection of basic evaluating coefficients but embody the vision of the strategy for increasing the value of the enterprise, confirmed by cause-and-effect relationships.
4. When substantiating the analytical indicators, the following key conditions were taken into account:
 - providing a comprehensive assessment of the effectiveness of the use of different types of capital and the possibility of calculating according to integrated reporting;
 - comparability for different sizes of enterprises;
 - the possibility of assessing the effectiveness of the use of capital components for a number of periods within the same enterprise, a separate type of economic activity or region;
 - variability of characteristics specifying the efficiency of using certain types of capital within 5-8 coefficients.
5. The use of analytical assessment in the implementation of an independent assessment of integrated reporting of corporate enterprises expands the goals and objectives of auditors, therefore, there is an increasing need to improve their competencies both directly in conducting an analytical assessment and in establishing signs of data reliability for applying analytical procedures. In particular, the use of professional judgment in the selection of alternative sources of information origin and identification of signs of data manipulation in the integrated reporting of the enterprise.

ADDITIONAL INFORMATION

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АНАЛІТИЧНІ ПРОЦЕДУРИ АУДИТУ ІНТЕГРОВАНОЇ ЗВІТНОСТІ КОРПОРАТИВНИХ ПІДПРИЄМСТВ

Мета дослідження полягає в розробленні системи аналітичних показників, які характеризують ефективність використання капіталів корпоративних підприємств для оцінки реалізації їхньої стратегії розвитку, що можуть бути використані незалежними аудитором при верифікації інтегрованої звітності.

Методологічним підґрунтям аналітичних процедур аудиту інтегрованої звітності є порівняльний аналіз фактично досягнутих показників ефективності, які найкраще презентують результати діяльності корпоративних підприємств у контексті перспектив використання складових капіталу для нарощування цінності із заздалегідь установленими індикаторами чи раніше досягнутими показниками. При обґрунтуванні системи аналітичних показників, які використовують при аудиті інтегрованої звітності корпоративних підприємств, ми виходили зі складових капіталу, що формують цінність корпоративного підприємства.

Уперше розроблено систему аналітичних показників для оцінки ефективності складових різних видів капіталу, що формують цінність корпоративного підприємства під час проведення незалежного аудиту інтегрованої звітності. Для забезпечення прозорості результатів оцінювання ефективності використання капіталу ця система має втілювати бачення стратегії нарощування цінності підприємства, підтверджене причинно-наслідковими зв'язками.

Практична цінність наукового дослідження полягає в тому, що отримані авторами результати сприятимуть оцінці ефективності використання різних видів капіталу при проведенні аудиту інтегрованої звітності корпоративних підприємств. Застосування аналітичної оцінки при здійсненні незалежного оцінювання інтегрованої звітності корпоративних підприємств розширює цілі та завдання аудиторів, відтак посилюється необхідність в удосконаленні їхніх компетентностей і безпосередньо при проведенні аналітичної оцінки, і при встановленні ознак надійності даних для застосування аналітичних процедур. Це буде корисним для застосування професійного судження при ухваленні рішень про відбір альтернативних джерел походження інформації та виявлення ознак маніпулювання даними в інтегрованій звітності корпоративного підприємства.

Ключові слова: аналітичні процедури, оцінка, капітал, аудит, інтегрована звітність, корпоративні підприємства

JEL Класифікація: M41, M42