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# INTEGRATED REPORTING: ECONOMETRIC MODEL OF QUALITY ASSESSMENT

*The issue of assessing the quality of integrated accounting of economic entities by means of an econometric model is outlined. It is established that the econometric model of integrated accounting quality assessment is a reliable tool for its estimation. The purpose of the study is to design an econometric model for better assessing the quality of integrated reporting. Because of the research, the criteria were allocated for constructing an econometric model for assessing the quality of integrated statements, the changes in the indicators that effect on the quality of the integrated statements of the subjects of economic activity was analyzed. The correlation matrix of the criteria included in the integrated statements was formed; the influence of the indicators included in an integrated statement for its overall assessment was defined; the results of an econometric model for assessing the quality of integrated statements of economic entities were analyzed. The theoretical substantiation and development of practical recommendations for assessing the quality of integrated reporting through an econometric model are relevant and important for users of such reporting. Particularly relevant is the importance of introducing an econometric model for assessing the quality of integrated reporting for countries with economies in transition. Approaches to assessing the quality of integrated reporting with the help of an econometric model are proposed. The obtained results are the basis for the output of integrated reporting of business entities to a qualitatively new level. The scope of research results is recommended to all economic entities during the preparation, compilation, submission and disclosure of integrated reporting. The conclusions and prospects of further researches in the direction of use of three other criteria for constructing an econometric model of estimating the quality of integrated reporting, namely: 1) disclosure of information on activities in the field of sustainable development; 2) compliance with the recommendations of the International Council for Integrated Reporting; 3) Interaction with stakeholders.*
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## Introduction

Integrated reporting is a relatively new type of reporting in international and national reporting practices by business entities. An assessment of the quality of integrated reporting is a tool to increase the credibility of such reporting by all stakeholders, as well as the driver for its further development. According to the International Annual Competition on Integrated Reporting for 2017, the winner in the nomination's best-integrated report is the credit union Vancity, second in the energy company Iberdrola SA, at the third engineering company, JSC ASE. According to Integrated Reporting Surveys in South Africa in 2017, Ernst & Young Global Limited ranked the following companies in the TOP 10 as regards the quality of composite integrated reporting: 1) Kumba Iron Ore Ltd; 2) Redefine Properties Ltd; 3) Sasol Ltd; 4) Nedbank Group Ltd; 5) Oceana Group Ltd; 6) Barclays Africa Group Ltd; 7) Truworths International Ltd; 8) Liberty Holdings Ltd; 9) Vodacom Group Ltd; 10) Standard Bank Group Ltd.

The international practice of integrating accounting covers more than 190 enterprises from different sectors of the economy, among them Marks & Spencer, UniCredit, British American Tobacco, Mitsubishi Corporation, BASF, Philips, SAP, BP, Coca-Cola, Danone, Vodafone and others. In South and Eastern Europe, the integrated reporting of active dissemination has not yet gained. At the same time, for instance, it is being compiled and made public by such companies as NJSC Naftogaz Ukraine, BDO LLC, DTEK, Ukrzaliznytsya PJSC.

## The Literature Review

Analysis of different existing approaches shows that most of the researches single out “better risk management” as one of the benefits of integrated reporting – Armbrester (2011), Budko (2014), Derun (2015), Druckman (2010), Eccles (2011), Gerasimova (2014), Komirna (2017), Malynovskaya (2016), Phillips (2011), Romanenko (2017), Safonova (2014), Watson (2011), Willis (2011). Thus, in accordance with the International Framework for Integrated Reporting, risks information is disclosed in a separate integral element of reporting framework “Risks and Management”. Part “Risks” is also presented at introduced into practice of integrated reporting “Management report”. According to Guidelines for preparing the Management Report, part “Risks” provides information on enterprise’ policies on managing operational and financial risks (market risk, credit risk, liquidity risk) with a description of their impact on the activity of the enterprise. It also describes approaches and tools that might be used by the enterprise to reduce the impact of such risks on its future activity. Therefore, the benefit described above refers to both integrated reporting and Management report.

Ensuring the possibility of more adequate assessment of the enterprise value and the results of its activity takes place in a row of benefits of integrated reporting (Komirna (2017), Malynovskaya (2016), Osadcha (2014), Phillips (2011), Romanenko (2017), Sikorska (2014), Vinokurova (2016), Watson (2011), Willis (2011). More adequate assessment of the enterprise value and the results of its activity can be achieved through the process of creating value, which includes the following types of capital: financial, industrial, intellectual, human, social, natural.

Other group of explorers (Adams (2014), Burke (2016), Clark (2014), Eryigina (2016), Havlová (2015), Kostyrko (2014), Kundrya-Vyisotskaya (2016), Malynovskaya (2016), Maroun (2012), Serafeim (2016), Solomon (2012), Wandrag (2010) underline an opportunity of better interaction with stakeholders as an advantage of integrated reporting. This benefit involves the disclosure of information in the integrated reporting for all interested users who can take more effective management decisions studying the information.

Botha (2014), Budko (2014), Gerasimova (2014), Domashenko (2013), Komirna (2017), Leka (2018), Maroun (2012), Osadcha (2014), Rensburg (2014), Romanenko (2017), Sikorska (2014), Solomon (2012), Vinokurova (2016) consider higher level of trust in relationships among interested parties one of the benefits of integrated reporting. Authors emphasize that integrated reporting provides a higher level of trust in relationships among interested parties.

Botha (2014), Vinokurova (2016), Derun (2015), Domashenko (2013), Druckman (2010), Fries (2010), James (2013), Kennedy (2016), Komirna (2017), Osadcha (2014), Perego (2016), Rensburg (2014), Romanenko (2017), Sikorska (2014), Whiteman (2016) draw attention to other benefit of integrated reporting – better understanding of the business model and strategy of the company by the employees, increased awareness of sustainable development. Such benefit is common for both integrated reporting and sustainable development reporting, based on sustainability report Manual GRI 4. Part of description of the enterprise activity model, presented at Management report discloses the company's strategy in the direction of «Perspectives of prosperity». It provides information about perspectives of farther development of the enterprise considering risks and challenges it faces while operating.

Research of better reconciling of the reports with the investors' needs as a benefit of integrated reporting was made by Armbrester (2011), Burke (2016), Budko (2014), Gerasimova (2014), Eccles (2011), Clark (2014), Komirna (2017), Maroun (2012), Osadcha (2014), Romanenko (2017), Sikorska (2014), Solomon (2012), Vinokurova (2016). Appearing of this benefit of integrated reporting is caused by absence of regulated standard form. Therefore, the information provided by the integrated reporting can be adapted to requests of any users of prepared information, investors as well.

Derun (2015), Gerasimova (2014), Kostyrko (2014), Malynovskaya (2016), Vinokurova (2016) chose better management of different capitals as a benefit of integrated reporting. The benefit is achieved by the International Framework for Integrated Reporting indicating the appropriate forms of capital used by enterprises in their economic activity and how they affect the process of creating the value of the enterprise.

Maximizing competitive benefits was studied as a benefit of integrated reporting by Gerasimova (2014), Eryigina (2016), Kostyrko (2014), Malynovskaya (2016), Phillips (2011), Watson (2011), Willis (2011). The advantage is manifested through the disclosure of information about products (goods, works, services) that the enterprise sells, and such information is not available in other published reporting forms.

Budko (2014), Gerasimova (2014), Kundrya-Vyisotskaya (2016), Maroun (2012), Serafeim (2016), Solomon (2012), include the availability of more accurate nonfinancial data to the benefits of integrated reporting. As a result, integrated reporting comparing to traditional reporting contains not only financial indicators, but also information about non-financial economic activity. This benefit is one of the features of integrated reporting.

Malynovskaya (2016), Phillips (2011), Safonova (2014), Watson (2011), Willis (2011) see increasing of transparency level of the company as a benefit of integrated reporting. Disclosed information in integrated reporting is qualitative, understandable for all stakeholders, comparable and is compiled based on generally accepted principles of reporting in accordance with the International Framework for Integrated Reporting. These particular qualities help to achieve a higher level of transparency of the company.

A better definition of opportunities, improvement of company image is also among benefits of integrated reporting (Budko (2014), Gerasimova (2014), Eryigina (2016), Watson (2011), Willis (2011). Better definition of the company's capabilities is manifested through provided by the integrated reporting information on the scope of activities, production technology, quantity and quality of employees. This gives customers an opportunity to get acquainted with the company's ability to produce one or another type of product. Improvement of the company's image is the result of transparency and openness of information about financial and economic activity of the company, as well as reflection of the financial, industrial, intellectual, human, social and natural aspects of its activity.

A few particular works (Domashenko (2013), Gerasimova (2014), Komirna (2017), Romanenko (2017), Vinokurova (2016) present improved reporting on sustainable development as a benefit of integrated reporting. Thus, an analysis of the connection between types of capital (Bezverxyj, 2018) included in the concept of integrated reporting of the enterprise and the goals of sustainable development has shown that among all types of capital the leading one revealing all goals of sustainable development (17 goals) is social capital. Financial capital takes the second place (it reveals 14 goals), the third place – human capital (12 goals), the fourth place – production capital (10 goals), the fifth – intellectual capital (9 goals), the sixth – natural capital (8 goals). Consequently, integrated reporting of an enterprise reveals all the goals of sustainable development through capital, therefore it improves reporting in the field of sustainable development.

Derun (2015), Maroun (2012), Serafeim (2016), Solomon (2012), Phillips (2011), Watson (2011), Willis (2011) distinguish the protection of reputation among the benefits of integrated reporting. Reputation protection is manifested through the provision of complete, comprehensive, reliable, unbiased information about the activity of the company to all interested users, and is reflected in the integrated reporting.

Druckman (2010), Fries (2010), Kundrya-Vyisotskaya (2016), Malynovskaya (2016) highlight reflection of the relationship between economic, environmental and social indicators as a benefit of integrated reporting. Thus, integrated reporting includes not only financial indicators, but also non-financial ones, which reveal the social and environmental aspects of the enterprise's activity. Those are related to the types of capital that the enterprise uses in the process of creating the value of the enterprise.

Eryigina (2016), Kostyrko (2014), Malynovskaya (2016) highlight the opportunity of attracting more investment as one of the benefits of integrated reporting. The opportunity of attracting more investments as an advantage of integrated reporting is manifested through providing more information to interested parties than traditional reporting. This might influence positively on the decision to invest in this enterprise.

They include providing more complete and reliable information in the benefits of integrated reporting. The reflection of the social, environmental and social aspects of the company's activity extends the information field of integrated reporting comparing to other reporting that is publicized. The integrity of integrated reporting as an advantage can be interpreted more accurately by users due to the increased flow of this kind of reporting. Compliance with its framework, in particular the International Framework for Integrated Reporting, regulating the rules for the preparation, compilation, approval, presentation and disclosure of the reporting, is the reason as well. Balance and absence of errors affect the accuracy of the information. Integrity (often called precise presentation) is enhanced by mechanisms of a complete internal control and reporting system, interaction among interested parties, internal audit or similar functions, as well as independent external approval.

New data for management needs takes place among the benefits of integrated reporting (Cheng (2015), Domashenko (2013), Green (2015), Ko (2015), Vinokurova (2016). Integrated reporting provides information for management needs for value creation based on different types of capital (financial, industrial, intellectual, human, social, natural) and discloses the goals of sustainable development.

Increasing the relevance of the information used in decision-making process by managers as well as external stakeholders takes place in a row of integrated reporting benefits (Phillips (2011), Serafeim (2016), Turturea (2015), Watson (2011), Willis (2011). Increasing the relevance of information is being achieved through the expansion of the array of data in the integrated reporting, which is used by both managers and external stakeholders to make appropriate management decisions.

As an isolated case, the benefits of integrated reporting include a better understanding of the causal relationships between financial activity and social responsibility of the company (Krzus (2011), Malynovskaya (2016). Thus, financial activity generates the capital that an enterprise uses to ensure social responsibility to society, as well as directly to its employees. The information above is displayed in the enterprise's integrated reporting, and therefore the users can better understand such causal relationships.

By Kostyrko (2014), Phillips (2011), Watson (2011), Willis (2011) benefits of integrated reporting include increasing access to information from external and internal sources for expanding analysis capabilities. This benefit of integrated reporting is the result of publicizing of integrated reporting. It also has a larger amount of information than traditional financial reporting, which can be used for analysis.

Safonova (2014), Vinokurova (2016) single out reducing the cost of reporting making process as a benefit of integrated reporting. The benefit mentioned above is contradictory, because the process of preparation, compilation, approval, submission, disclosure of integrated reporting requires the attraction of additional resources. The company will incur additional expenses for the compilation of integrated reporting.

Some works bring up increasing employees' loyalty as one of the benefits of integrated reporting (Derun (2015), Malynovskaya (2016). The increase of employee's loyalty is the result of disclosing information about company's social protection of employees, labor safety, the level of remuneration in the integrated reporting.

Kostyrko (2014), Malynovskaya (2016) single out improving the quality of corporate governance as a benefit of integrated reporting. Improving the quality of corporate governance comes from obtaining information of both types financial and non-financial, which are presented in the integrated reporting, and is absent in the traditional financial statements of the enterprise.

Derun (2015), Druckman (2010), Fries (2010) bring up increasing the company's profitability in the long run as a benefit of integrated reporting. Analyzing the information provided by the integrated reporting, it's possible to take appropriate management decisions that will help increase the company's revenue in the long run.

Among other benefits of integrated reporting, there is a wider perspective when considering the company (Domashenko (2013), Vinokurova (2016). Let's emphasize that integrated reporting of an enterprise presents all the essential aspects of its activity. Therefore the information field for the analysis of the prospects of the enterprise will be expanded in comparison with the traditional accounting of the enterprise.

As an isolated case, the benefits of integrated reporting include taking into account numerous changes in corporate reporting (Ageev, Galushkina, Kopkova, Smirnova, Shtukelberger (2016). As long as integrated reporting is a new form of reporting, it takes into account all the latest trends in corporate reporting and is flexible to the changes that shape modern approaches to the preparation, compilation, presentation, approval and disclosure of this kind of reporting.

Some works bring up de-offshorization of the economy among the benefits of integrated reporting of enterprises (Malynovskaya, 2016). The de-offshorization of the economy is a potential benefit of integrated reporting to a society that is manifested in providing information to all interested users of integrated reporting. Integrated reporting is aimed against concealing the incomes of Ukrainian enterprises formally owned by offshore companies.

Derun (2015) highlights a reduction in company's costs as the benefit of integrated reporting. The above-mentioned benefit cannot be accurate, because when creating the integrated reporting, the enterprise bears additional time spent on the preparation, compilation, submission, approval and disclosure of the reporting. Also the company will have additional labor costs, the expenses of hosting integrated reporting on the company's web site, the cost of translating integrated reporting into a foreign language, etc.

Highlighting reducing corruption as a benefit of integrated reporting was made by Malynovskaya (2016). Reducing the level of corruption is a social potential benefit of integrated reporting, since it is a source of information about the activity of the enterprise. All interested parties that need relevant data have access to this information, which was inaccessible to the publicity and was some sort of goods.

Training specific stakeholder groups takes place in the list of benefits of integrated reporting (Domashenko (2013). Studying specific stakeholder groups involves gaining knowledge about understanding the indicators of an integrated reporting of the enterprise.

Domashenko (2013) presents operation with both indicators monetary and physical as a benefit of integrated reporting. Integrated reporting is reporting based on the International Fundamentals of Integrated Reporting and includes a set of financial baselines and calculated indicators, as well as non-financial indicators, provided at the request of accounting department by other business units of an enterprise. It also discloses information about value creation for effective capital management (human, natural, social, intellectual, industrial, financial, etc.) in the short, medium and long-term.

An increase in the credit rating singled out as a benefit of integrated reporting by Malynovskaya (2016). The analysis of non-financial information presented in the integrated reporting of the enterprise in comparison with traditional accounting reporting gives more complete picture of the activity of the enterprise. It allows creditors to make better management decisions regarding their credit policy, and increases the credit rating of the enterprise as well. Rudyk et al. (2018) have the similar opinion – they proved that using non-financial reports helps to improve the level of access to finance. In addition, they recommend to implement the Code of ethics, where running non-financial reporting is an equal part of company’s performance as well as financial.

As isolated cases, improvement of relations with state authorities, tax and insurance privileges, reduction of data distortions presented in the report, promotion of reduction of atmospheric emissions were highlighted as benefits of integrated reporting by Derun (2015). Disclosure of information about the activity of the company, in particular on the completeness of charging and paying taxes and fees to budgets of different levels improves relations with state authorities. Information about tax and insurance privileges is provided in the integrated reporting. Reduction of data distortions in reporting is being achieved through compulsory audits of integrated reporting, verification of indicators by the relevant divisions of the enterprise that provide data for the compilation of integrated reporting, monitoring of integrated reporting by internal auditors who monitor the quality of the reporting. Contribution to reducing emissions to the atmosphere as one of the benefits is achieved by opening these data to all interested users. The increasing amount of emissions to the atmosphere damages the company's image as a polluter of the environment.

## Research Methodology

Research methods such as analysis, synthesis, induction, deduction, abstraction, idealization, generalization and modeling were used to design an econometric model for assessing the quality of integrated accounting of economic entities. The theoretical substantiation and development of practical recommendations for assessing the quality of integrated reporting through an econometric model is relevant and important for users of such reporting. The information base of the research is integrated reporting of enterprises, as well as the results of competitions for defining the quality of integrated reporting.

## Integrated reporting: an econometric model of quality assessment

To evaluate the quality of integrated statements, we will analyze the methods of international statements contests, which evaluate the integrated statements. According to the majority of integrated statements quality assessment competitions, four evaluation criteria are used.

We construct a mathematical model for evaluating the first criterion and determine which variables most affect the quality of the composite integrated statements by this criterion. The first criterion is the disclosure of information about the main activity. So, according to the source, integrated reporting of an enterprise is evaluated according to the group of indicators that must be included in such a report of the enterprise. Determine the main input variables of the mathematical model according to the requirements for this criterion:

- information about the key events of the organization during the reporting period (variable Information);
- Key Performance Indicators for the Reporting Period (Results variable);
- The quality of information about the company's strategy, the results of its implementation, information about the responsibility for achieving the strategic goals of the organization (variable Strategy);
- information on the relationship and interdependence of «remuneration management» with the performance of the company (variable Management);
- The quality of information about the external and internal environment of functioning (market position) (Market variable);
- The quality of information about the company's risks and opportunities, their management (Risk variables);
- reflection in the Innovation Orientation Quality Organization report (Innovations variable);
- displaying information on the activities of key assets (variable assets);
- availability of indicators of economic performance, effectiveness of achievement of strategic goals (KPIs), their quantity and quality of disclosure (variable KPI).

Depending on how well the integrated report is compiled (whether all indicators are included, completeness of information, etc.), the evaluation of the provided integrated report according to the first criterion is presented. Assigned this estimate to the variable Score.

The main purpose of the study is to determine which of the indicators most affect the score, and which is less. This will allow reporting more qualitative and focusing on the indicators that have the greatest impact on the quality of the reporting.

Let's consider the above indicators on an example of the integrated report of the American company Excelon (USA), which are shown in table 1.

Table 1

Key indicators for Excelon's Integrated Reporting Quality Assessment

| Reporting period | Score | Information | Results | Strategy | Management | Market | Risks | Innovations | Assets | KPI |
|---|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.131 | 0.009 | 0.012 | 0.008 | 0.008 | 0.005 | 0.011 | 0.02 | 0.025 | 0.044 |
| 2009 | 0.653 | 0.024 | 0.02 | 0.021 | 0.058 | 0.032 | 0.032 | 0.069 | 0.036 | 0.082 |
| 2010 | 0.344 | 0.018 | 0.002 | 0.011 | 0.023 | 0 | 0.013 | 0.067 | 0.089 | 0.097 |
| 2011 | 0.657 | 0.069 | 0.062 | 0.014 | 0.048 | 0.014 | 0.016 | 0.074 | 0.147 | 0.07 |
| 2012 | 0.32 | 0.017 | 0.023 | 0.012 | 0.017 | 0.032 | 0.004 | 0.034 | 0.064 | 0.076 |
| 2013 | 0.188 | 0.018 | 0.003 | 0.019 | 0.012 | 0.005 | 0.007 | 0.03 | 0.035 | 0.036 |
| 2014 | 0.782 | 0.079 | 0.043 | 0.012 | 0.064 | 0.022 | 0.045 | 0.174 | 0.087 | 0.083 |
| 2015 | 0.094 | 0.006 | 0.009 | 0.001 | 0.007 | 0.001 | 0.002 | 0.006 | 0.015 | 0.021 |
| 2016 | 0.467 | 0.021 | 0.027 | 0.007 | 0.046 | 0.014 | 0.021 | 0.058 | 0.123 | 0.171 |
| 2017 | 0.512 | 0.008 | 0.021 | 0.035 | 0.022 | 0.045 | 0.011 | 0.041 | 0.089 | 0.185 |

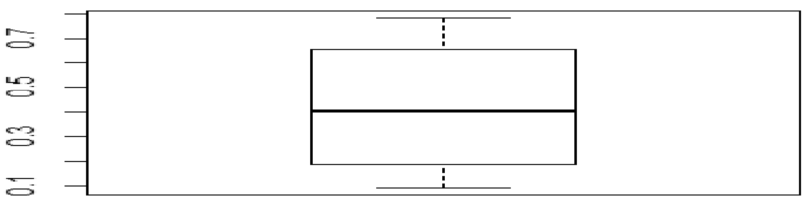
According to table 1, for example, in 2008, the integrated report of Excelon received a quality rating of 13.1%, with the full disclosure of the information on the indicator was 0.9%, on the indicator Results 1.2%, on the indicator of Strategy 0,8% and etc. So the question arises, it is necessary to improve the quality of completeness of information on all indicators, or to pay attention to key indicators. What are the key indicators, how to rank them?

Experts evaluated the quality of the company's integrated report (General Score Score) for 9 criteria (Results, Strategy, Market, Management, etc. from Table 1). On the basis of 9 criteria, according to the appropriate method, the overall score for the report was displayed on a scale from 0 to 1 (from 0 to 100%).

Figure 1 shows how the criteria change on a scale from 0 to 1.

Figure 1

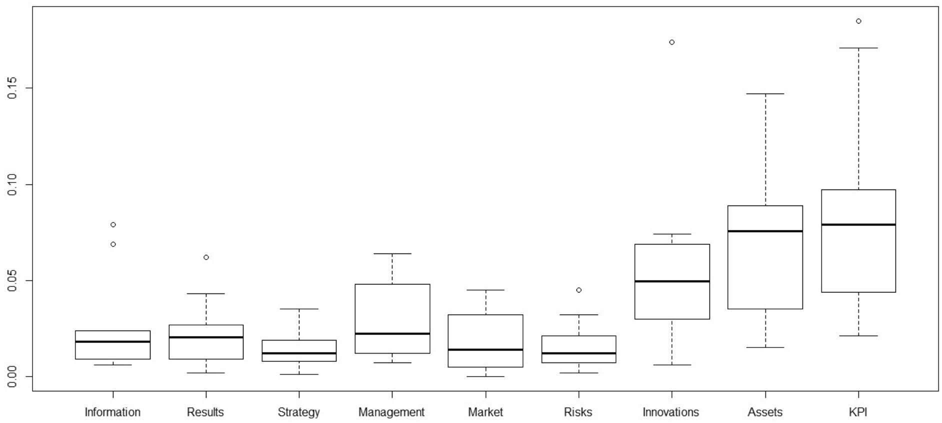
Modify Score Quality Score from 0 to 1



From Figure 2 shows that the greatest difference in the experts was caused by the criteria Innovations, Assets, KPI.

Figure 2

Change in metrics that affect the quality of an integrated report on a scale from 0 to 1




Next, consider how the criteria are related to each other and which of them more influence the overall score, but which have little effect. To do this, use the correlation matrix. The results of the construction of the correlation matrix are shown in table 2.

Table 2

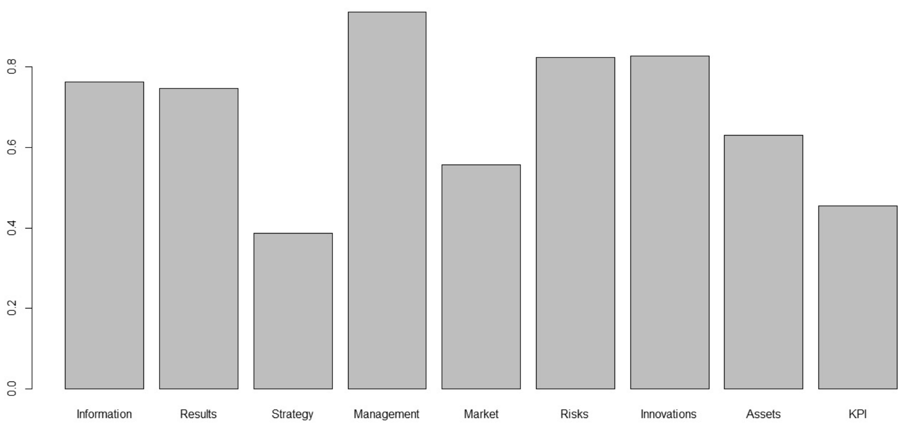
The Correlation Matrix of the criteria included in the Excelon Integrated Report (on a scale from 0 to 1)

| Indicator (criterion) | Score | Information | Results | Strategy | Management | Market | Risks | Innovations | Assets | KPI |
|---|---|---|---|---|---|---|---|---|---|---|
| Score | 1 | 0.762 | 0.746 | 0.387 | 0.935 | 0.557 | 0.822 | 0.826 | 0.629 | 0.454 |
| Information | 0.762 | 1 | 0.832 | -0.046 | 0.755 | 0.067 | 0.695 | 0.851 | 0.567 | -0.051 |
| Results | 0.746 | 0.832 | 1 | 0.051 | 0.685 | 0.322 | 0.475 | 0.57 | 0.711 | 0.18 |
| Strategy | 0.387 | -0.046 | 0.051 | 1 | 0.131 | 0.734 | 0.102 | 0.069 | 0.142 | 0.508 |
| Management | 0.935 | 0.755 | 0.685 | 0.131 | 1 | 0.351 | 0.903 | 0.827 | 0.537 | 0.331 |
| Market | 0.557 | 0.067 | 0.322 | 0.734 | 0.351 | 1 | 0.268 | 0.207 | 0.19 | 0.58 |
| Risks | 0.822 | 0.695 | 0.475 | 0.102 | 0.903 | 0.268 | 1 | 0.9 | 0.275 | 0.222 |
| Innovations | 0.826 | 0.851 | 0.57 | 0.069 | 0.827 | 0.207 | 0.9 | 1 | 0.455 | 0.194 |
| Assets | 0.629 | 0.567 | 0.711 | 0.142 | 0.537 | 0.19 | 0.275 | 0.455 | 1 | 0.601 |
| KPI | 0.454 | -0.051 | 0.18 | 0.508 | 0.331 | 0.58 | 0.222 | 0.194 | 0.601 | 1 |

From the 2nd column of table 2 shows that the most impact on the Score is Information, Results, Management, Market, Risks, Innovations, Assets (the correlation coefficient is greater than 0.5), and the Strategy and KPI factors affect the overall assessment slightly, as can be seen from figure 3.

Figure 3

Impact of the indicators included in the integrated report on its overall Score




Based on the results presented in table 2 and figure 3 we will construct a multi-factor econometric model of the dependence of the overall Score estimation from regressors Information, Results, Management, Market, Risks, Innovations, Assets:

$$Score= a_0+ a_1Information+ a_2Results+ a_3Management+ a_4Market+ a_5Risks+ a_6Innovations+ a_7Assets, \quad (1)$$

where ai – model parameters.

The results of modeling by model (1), obtained using the specialized software Statistica 5.0, are shown in table 3.

Table 3

Results of construction of the econometric model (1)

| Indicator | Rating parametera | Standard deviation (error) from the estimation of the model parameter | t value | Pr(>\|t\|) |
|---|---|---|---|---|
| Intercept | 0.012 | 0.054 | 0.215 | 0.849 |
| Information | 5.051 | 5.977 | 0.845 | 0.487 |
| Results | -3.826 | 5.682 | -0.673 | 0.570 |
| Management | 5.167 | 4.740 | 1.090 | 0.039 |
| Market | 6.232 | 2.779 | 2.243 | 0.015 |
| Risks | 3.181 | 10.682 | 0.298 | 0.794 |
| Innovations | -1.064 | 3.396 | -0.313 | 0.784 |
| Assets | 1.382 | 1.343 | 1.029 | 0.004 |

The Pr parameter indicates whether the model parameter is a meaningful estimate. In the event that Pr> | t |, then the estimation of the model parameter is not significant and is eliminated from the model.

From table 3 it is seen that the significant parameters are Management, Market, Assets, and therefore the model (1) will look like:

Score = 5.167 * Management + 6.232 * Market + 1.382 * Assets (2)

For model (2), the determination coefficient is 0.981, the adjusted coefficient is 0.944, which indicates the high quality of the model and shows that the change in Score score of 98.1% is explained by the change in the indicators included in the model.

To verify the determination factor, use Fisher's criterion (F-statistic) and calculate it using the STATISTICA 5.0 software. So Fqr = 26.14, and the probability that the determination coefficient is a significant p-value = 0.011. This means that the model is qualitative and its results can be used in practice.

Consequently, the variation of the overall score of the Score by 98.2% is due to variation in the factors of Management, Market, Assets and 1.8% by the influence of other factors. The relationship between the dependent variable Score and each of the factors is directly proportional. With an increase in the Management estimate of 1, the Score will increase by 5.167, with an increase in the Market estimate of 1, the Score will increase by 6.232, an increase in the value of the Assets by 1, The Score will increase by 1,382, other factors affect the overall assessment insignificantly.

## Conclusions

Thus, when preparing, compiling, submitting and publishing integrated accounting by entities, the first requirement is to pay attention to the criteria of Management, Market, Assets.

The use of an econometric model for assessing the quality of integrated reporting may be, in fact, as enterprises (compilers of such reporting) and audit firms during its confirmation, rating agencies (when compiling the ranking of economic entities based on the indicators of integrated reporting), organizers of annual national competitions quality integrated reporting.

The assessment of the quality of integrated reporting is necessary to ensure reliability, transparency of information that is necessary for sound management decisions, which is why in the course of the study was proposed an econometric model for assessing the quality of integrated statements.

The construction of an econometric model for assessing the quality of integrated statements allowed assessing the quality of such statements, and this approach to quality assessment undoubtedly proves the need for constant investment in information technology, training not only specialists of the accounting service of enterprises, but also specialists of other departments involved in the process of preparation, compilation , submission, approval and disclosure of integrated statements.

An econometric model for assessing the quality of integrated statements will be useful for all enterprises that form integrated statements.

The scientific value of the study is to further development approaches to assessing the quality of integrated statements based on the econometric model. The practical value of this study is to apply an econometric model for assessing the quality of integrated statements in the practice of enterprises. Social value is in informing and familiarizing all potential compilers and users of integrated statements to assess its quality.

## References

Adams, C. (2014). New research finds benefits to companies doing integrated reporting. Retrieved from https://drcaroladams.net/new-research-finds-benefits-to-companies-doing-integrated-reporting.

Ageev, A. I., Galushkina, M. V., Kopkova, E. V., Smirnova, V. A., Shtukelberger, K. (2016). Integrated reporting: Management Challenges. Moskow: Institute of Economic Strategies.

Antoniuk, L., Britchenko, I., Polishchuk, Y., Rudyk, R., Sybirianska, Y. and Machashchik, P. (2018). Code of ethics for SMEs: substantiating the necessity and willingness to implement in Ukraine. – Problems and Perspectives in Management, 16(3), p. 150-162. doi:10.21511/ppm.16(3).2018.12.

Bezverxyj, K. V. (2018). Sustainable Development Concept as a Basis for Integrated Reporting of Enterprises. – Scientific Journal of the National Academy of Statistics, Accounting and Audit, 4, p. 75-88.

Budko, O. V. (2014). Development and necessity of compilation of integrated reporting. – Scientific Herald of Kherson State University. Series: Economic Sciences, 6(5), p. 114-117.

Burke, J. J., Clark, C. E. (2016). The business case for integrated reporting: Insights from leading practitioners, regulators, and academics. – Business Horizons, Vol. 59, N 3, p. 273-283.

Cheng, M. M., Green, W. J, Ko, J. (2015). The Impact of Strategic Relevance and Assurance of Sustainability Indicators on Investors' Decisions. – Auditing: A Journal of Practice and Theory, forthcoming, 34, 1, p. 131-162.

Derun, I. (2015). Corporate Social Reporting as an Addendum to Financial Statements. – Bulletin of the Taras Shevchenko National University of Kyiv. Economy, 10, p. 10-17.

Domashenko, Yu. V. (2013). Integrated reporting: improved transaction accounting as an indicator of performance. – Economic Bulletin of the National Mining University, 1, p. 65-72.

Druckman, P., Fries, J. (2010). Integrated Reporting: the Future of Corporate Reporting?. – The Landscape of Integrated Reporting Reflections and Next Steps. Harward Business School, p. 81-84.

Eccles, R. G., Armbrester, K. (2011). Two disruptive ideas combined: Integrated in cloud. – IESE Insight, 8, p. 13-20.

Eryigina, N. S. (2016). Integrated reporting: application prospects in Russia. – Gaudeamus Igitur, 4, p. 32-33.

Gerasimova, L. N. (2014). Integrated financial statements: advantages and prospects for development in Russia. – Audit and financial analysis, 4, p. 33-35.

GRI G4 Guidelines Part 1 Reporting Principles and Standard Disclosures Retrieved from https://www.globalreporting.org/standards/gri-standards-download-center/#user-details.

Havlová, K. (2015). What Integrated Reporting Changed: The Case Study of Early Adopters. –

Procedia Economics and Finance, 34, p. 231-237.
James, M. L. (2013). Sustainability and integrated reporting: opportunities and strategies for small and midsize companies. – Entrepreneurial executive, 18, p. 17-28.
Kostyrko, R. O. (2014). Perspectives of International Integrated Reporting. – Bulletin of the National University «Lviv Polytechnic». Management and entrepreneurship in Ukraine: stages of formation and development problems, 794, p. 181-187.
Krzus, M. (2011). Integrated Reporting: If not now, When?. – AASB, 8.3, p. 271-276.
Kundrya-Vyisotskaya, O. P., Volkova, O. K. (2016). Integrated reporting as a tool for a new level of enterprise presentability: Banking system: sustainability and development prospects: a collection of scientific articles of the VII international scientific-practical conference on banking economics, Pinsk: PolesGU.
Leka, L. (2018). The value of integration. Accounting Practice. Retrieved from https://www.ifa.org.uk/media/855503/016_FA_05_JulyAugust_SME_Accounting-Practice_Leka.pdf.
Malynovskaya, N. V. (2016). Integrated reporting: theory, methodology and practice. (Doctoral dissertation). Retrieved from http://haa.su/Mcm.
Morros, J. (2016). The integrated reporting: A presentation of the current state of art and aspects of integrated reporting that need further development. – Intangible Capital, 12, 1, p. 336-356.
On Approval of Methodological Recommendations for the Report on Management. Retrieved from https://bitly.su/09cnl.
Perego, P., Kennedy, S., Whiteman, G. (2016). A lot of icing but little cake? Taking integrated reporting forward. – Journal of Cleaner Production, 136, A, p. 53-64.
Phillips, D., Watson, L., Willis, M. (2011). Benefits of Comprehensive Integrated Reporting. – Financial Reporting, 2, p. 26-30.
Rensburg, R., Botha, E. (2014). Is Integrated Reporting the silver bullet of financial communication? A stakeholder perspective from South Africa. – Public Relations Review, 40, 2, p. 144-152.
Romanenko, O. A., Komirna O. V. (2017). Analysis of integrated reporting in ensuring sustainable development of societies. – Global and national economic problems, 17, p. 880-887.
Safonova, F. Iu. (2014). Method of forming an integrated report (PhD dissertation). Retrieved from http://www.dslib.net/bux-uchet/metodika-formirovanija-integrirovannogo-otcheta-http-unecon-ru-dis-sovety-ssylka-na.html.
Serafeim, G. (2016). Integrated Reporting: Statement on Management Accounting. – Institute of Management Accountants, 31.
Sikorska, T. S., Osadcha, O. O. (2014). Integration of non-financial indicators in the reporting of the subject of economic activity. – Young scientist, 6(2), p. 38-41.
Solomon, J., Maroun, W. (2012). Integrated reporting: the influence of King III on social, ethical and environmental reporting. - The Association of Chartered Certified Accountants, 56.
The International <IR> Framework. Retrieved from https://bitly.su/lodC.
Turturea, M. (2015). Integrated reporting into practice – a ten year experience. – SEA – Practical Application of Science. III, 1 (7), p. 565-572.
Vinokurova, O. A. (2016). The role of a professional accountant in the preparation of integrated reports. – Economy: yesterday, today, tomorrow, 7, p. 192-210.
Wandrag, S. (2010). Sasol's Reporting Journey. – The Landscape of Integrated Reporting Reflections and Next Steps. Harward Business School, p. 91-92.