



To What Extent are the Underlying Concepts of Integrated Reporting Applicable for Hi-tech Knowledge-Based Organizations?

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To what extent are the underlying concepts of integrated reporting applicable for hi-tech knowledge-based organizations?

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Abstract

Purpose – The purpose of this article is to examine the proper structure for the integrated reporting of hi-tech knowledge-based organizations (KBOs); in particular, the authors evaluate the appropriateness of the concept and elements of integrated reporting for hi-tech knowledge-based organizations.

Design/methodology/approach – The study employs an exploratory sequential mixed-method approach, including an initial qualitative case study, then an instrument development phase (Delphi), and finally, a quantitative survey.

Research limitations – Focus on a single country, and a small sample of interviewees participated.

Practical implications – This paper concludes that the existing integrated reporting framework is useful for the different type of organizations, but with some modifications. In addition, it analyzes how directors of Iranian hi-tech KBOs perceive and value content elements of integrated reporting.

Social implications – This paper suggests that the fulfillment of corporate transparency for Iranian hi-tech KBOs can be achieved by the policy maker's support on integrated reporting.

Findings – The resulting analysis concluded that hi-tech KBOs have the potential to prepare a simplified, integrated report. The Organization overview, governance, business model, strategies and resource allocation, performance, opportunities, and risks are the content elements relevant to be included in the hi-tech KBOs annual report. However, the organization's future outlook is not confirmed to be included. Due to liability and competitive concerns, organizations do not provide targets, forecasts, projections, or even scenarios.

Originality/value – Iran is swiftly moving towards a knowledge-based economy, and hi-tech KBO's will become the powerhouse of the economy. It is important to understand how managers of Iranian hi-tech KBOs perceive and value integrated reporting. The previous practical studies are not focused on Iranian firms, and the impacts of integrated reporting on hi-tech KBOs and its implementation and effectiveness had not been studied before.

Keywords – Integrated Reporting, IIRC Framework, Hi-tech Knowledge-based Organizations, Exploratory Sequential Mixed Method, Delphi Technique.

Paper type – Research paper

Introduction

Businesses have an ethical obligation to a wide range of stakeholders related to their economic, social, environmental responsibilities, which are over profit-making and increasing shareholder wealth (Lodhia, 2015). Therefore, many companies are providing information about their formal sustainability activities for stakeholders to assure the decision-process. These commonly involve Sustainability, ESG (Environmental, Social, and Governance), and CSR (Corporate Social Responsibility) reports (James, 2015). Sustainability reports try to focus on increasing the demand for non-financial reporting by more and more disclosure on social-environmental performance (Stubbs and Higgins, 2018).

In 2009, the alliance of investors, companies, regulators, non-governmental organizations, and accounting professions made "The International Integrated Reporting Council (IIRC)" with the standard viewpoint. In 2013, IIRC published the International Integrated Reporting Framework that helps forecast the entity's future performance by linking financial and non-financial information and accelerating the adoption of integrated reporting across the world. They believed that the next step in corporate reporting is transferring information aligned with the organization value creation process (International <IR> Framework 2013). It is revolutionary reporting with integrated results coming from financial and non-financial information inputs. The International Integrated Reporting Framework enables companies to communicate this type of information in a way that makes it possible to assess the performance of the organization in the future (Lipunga, 2015) by incorporating in its IIRC framework's guidelines the elements of sustainability and CSR reporting common to ISO 26000 and GRI G4 (Iidowu *et al.*, 2016).

According to the yearly analysis of <IR> practice, most studies have done and taken evidence from conventional annual reports rather than integrated reports (Wild and van Staden, 2013, Haji and Anifowose 2016). In addition, existing <IR> studies, to a large extent, examine the aspects of corporate disclosure after the adoption of <IR> practice (Setia *et al.*, 2015). However, Haji and Anifowose (2016), in their research, have evaluated the quality and scope of <IR> practice. Some articles have focused on integrated reporting items and elements comprising Joubert (2014), Dahms (2012), Doni *et al.* (2016), and Ayoola (2013). Initial literature reviews point to the fact that information on the subject of integrated reporting is not yet complete and material (Cerbone and Maroun, 2020). Since the system has not been implemented in Iranian companies so far and is considered an interesting development in accounting and management, it is useful to check for its applicability and relevance for Iranian companies. Just before the worsening of international sanctions that hurt a recovering Iranian economy in 2016, the country accelerated its development capacity, higher education, and research programs. It was mainly driven by private small and medium enterprises' dynamism, the privatization of banks and large companies, and the Tehran Stock Exchange as one of the most performing in the Middle East, where an increasing number of listed companies' shares belonging to 40 industries and service sectors were traded daily. This temporary break did not reduce investors' and funders' ever-growing needs who appreciate more transparency and information disclosure, whether financial and more non-financial, on company performance. Managers and business leaders, especially the most influential, cannot be indifferent to these signals now associated with the factors of good management and overall performance. With its numerous diaspora and highly educated engineers and managers, Iran is swiftly moving towards a knowledge-based economy, and hi-tech KBOs will become the economy's powerhouse. Knowledge-based organizations can be defined as organizations that rely on individuals' ability to create, obtain, and apply knowledge to products and services. In such organizations, learning and the continual accumulation of knowledge along with collaborative and team learning are vital parts of the organization's work. It is important to understand how managers of Iranian hi-tech KBOs perceive and value integrated reporting even if the voluntary implementation of new and innovative standards is complex and a source of constraints. With some exceptions (Mashayekhi *et al.*, 2019), previous practical studies in corporate

sustainability reporting are not focused on Iranian firms. Similarly, the implementation, effectiveness, or practical impacts of integrated reporting on Iranian companies have not been studied before. In order to benefit from the advantages of both qualitative and quantitative methods, this study uses an exploratory sequential design including an initial qualitative case study, then an instrument development phase, and finally, a quantitative survey. EPIL company, a respected and well-known knowledge-based organization in Iran, also active internationally, was first selected, and the research was then extended to the electrical industry. The suggested elements for integrated reporting are examined first. Then we investigate their relevance perceived by the group of managers included in the study.

Therefore, the research's first objective is to identify and categorize the items to be incorporated in the firms' integrated reports, using prior research common findings and the IIRC framework guidelines in light of managers' perceptions. This can reduce the information gap between the IIRC framework guidelines and what it is in practice. This begins to be addressed by document analysis in the qualitative phase. The second objective aims to determine the specific issues which are relevant to be incorporated in the case firms' annual report, which will be done by semi-structured interviews in the qualitative section. The third objective is to identify the most critical items to be included in the annual integrated report, which is done within the Delphi phase. The fourth objective is to verify if the qualitative results could be generalized to Iran's electrical industry, which is done through a general survey in the quantitative phase. In summary, this research questions the practical feasibility of integrated reporting and the relevance of its concepts for hi-tech KBOs to stimulate the appropriation by the managers of an integrated view of their business in order to improve current reporting practice.

The paper is organized as follows: The literature review is presented in the first section. The research design containing the qualitative, Delphi, and quantitative phases are being exposed in section 2. The results and their interpretation are explained in section 3, followed by the discussion and conclusion in section 4, indicating the main contributions, implications, and limitations of the research.

1. Literature review

1.1. Empirical studies on integrated reporting

Most of these studies have considered two perspectives for integrated reporting, the first one being the qualitative and in-depth analysis. The latter consisted of content analysis and a cross-sectional review of annual reports.

Qualitative studies are usually based on case studies and in-depth interviews with the first <IR> adopters and their relevant stakeholders. They aimed at assessing the level of understanding and perceiving of the integrated report, often revealing a difference between the theory of <IR> and what is implemented. In the meantime, <IR> practices are mostly encouraged by consideration rather than organizational accountability and sustainability. For example, in the Australian context, Higgins *et al.* (2014), on his survey on 23 managers of Australian firms, conceptualize <IR> for meeting expectations. It is like strategic storytelling. For this country, Stubbs *et al.* (2014) figured out that there is a remarkable gap between investors' required information and the data provided without any innovation in corporate disclosure. Moreover, Steyn (2014) concluded that South African companies have introduced <IR> to improve their reputation and organizational legitimacy instead of corporate responsibility.

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9 An increasing number of practical studies have applied for specific or multiple capital disclosure in
10 integrated reports in content analysis methods. Wild and van Staden (2013) and Melloni (2015) have
11 investigated capital disclosure practices in a sample of IIRC pilot program adopters. They found
12 respectively that most of the companies reported only four of their capitals such as human, natural,
13 social, and financial and offer few qualitative and future-looking information. In this early stage, findings
14 of the research highlight that both applications of <IR> guidelines and the extent of corporate disclosure
15 as a result of the adoption of <IR> practice have escalated, but companies could not meet the key aspects
16 of existing <IR> guidelines as indicated in <IR> frameworks. Given the need to inform about the
17 transformation of different types of capital in the integrated reporting, it is very challenging to decide
18 what information is material and needs to be published in an integrated report (Maroun, 2018).

19 Moreover, this type of disclosure tends to be general instead of company-specific (Haji and Anifowose,
20 2016). Even for South Africa, where there is an organizational push for companies to produce integrated
21 reports, the degree of comprehension of local and international <IR> guidelines tend to remain unclear
22 despite the continuous effort of <IR> and attempts for building explicit reporting methodologies to report
23 "multiple capitals" after the presentation of the <IR> requirement (Haji and Hossein 2016).

24 Therefore, despite previous literature, some researchers, after several years of longitudinal
25 ethnographic studies, came to the conclusion that <IR> was actually a myth, realizing why there was a
26 lot of debate in this regard (Gibassier *et al.*, 2018). Some similar conclusions still come out from Cerbone
27 and Maroun's (2020) study on South African integrated reports' materiality. In fact, matching an existing
28 company information system with a set of new and often interrelated reporting elements as those of the
29 IIRC framework is a difficult challenge to take up and which can only be met by successful efforts and
30 the establishment of an appropriate infrastructure regarding the information systems and reporting
31 process. Fortunately, a wind of optimism comes from a paired sample of comparisons and analysis of 180
32 US companies over 18 years, starting in 1993 (Eccles *et al.*, 2014) who demonstrated superior sustainable
33 reporting practices and performance of ESG activities and even financial ones of high sustainability
34 companies versus low sustainability companies. For this reason, instead of screening already published
35 integrated reports, the present research adopted another approach by collecting managers' perceptions
36 on the possible integrated reporting elements for their company and then expanding the study to a whole
37 industrial sector.

38 *1.2. Possible consensus on integrated reporting disclosure items*

39 Another type of study focused on integrated reporting items. Dahms (2012), Doni *et al.* (2016), Ayoola
40 (2013), Dahms (2012), Joubert (2014) evaluated the integrated reporting practices and disclosure quality
41 according to the elements of IIRC (2013) and King III (2009). Doni *et al.* (2016) did the same for disclosing
42 non-financial information in the mining companies' integrated annual reports on the Johannesburg Stock
43 Exchange. Ayoola (2013) worked on case studies in the Nigerian oil and gas industry. All of them found
44 not well-defined information, a lack of consistency across companies, and a need to improve the quality
45 of reporting practices.

46 Finally, after a broad literature review, conceptual, normative, and empirical, a list of integrated
47 reporting items to match concepts and practical relevance for professionals in the light of the IIRC
48 framework was built for further inspection. Table 1 summarizes the 16 reporting elements cited by the
49 authors referred above, where it appears that governance and organizational overview, and external
50 environment are common to them.

51 Table 1. Fundamental concepts of integrated reporting derived from the previous literature
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Reporting elements	Articles reporting on elements			
	IIRC, 2013; Joubert, 2014	Dahms, 2012	Doni <i>et al.</i> , 2016	Ayoola, 2013
Reporting parameters		■	■	■
Organizational overview and external environment	■	■	■	■
Governance	■	■	■	■
Business model	■	■	■	
Strategies and resource allocation	■	■	■	
Opportunities and risks	■		■	
Performance	■	■	■	
Future outlook	■	■		
Remuneration policies		■	■	
Analytical commentary		■		
Financial capital indicators				■
Natural capital indicators				■
Human capital indicators				■
Social and relationship capital indicators				■
Stakeholders			■	

1.3. Integrated reports and integrating reporting

Integrated reporting aims to provide investors and significant audiences financial and non-financial information. It is thus between financial reporting, which offers exclusively financial information complying with GAAP and other mandatory accounting standards, and sustainability and corporate social responsibility reporting, whose aims are to serve all stakeholders by supplying them exclusively with non-financial information about society topics: sustainable development, environment protection, social responsibility, and corporate governance.

The preparation and publication of a reliable and relevant integrated report constitute the very object of integrated reporting. According to the IIRC, the information content includes the external environment, six forms of capital employed to create value (financial, manufactured, intellectual, human, social and relationship, and natural), and the value creation process (Rinaldi *et al.*, 2018).

The IIRC International Integrated Reporting Framework recommends that the following elements be included in the integrated report in order to be able to illustrate the process of creating value in an organization (Asanga Abhayawansa, 2014):

1. Organizational overview and external environment: Outline of the Organization clarifying what it does and the conditions under which it works.
2. Governance: How the company's administration structure underpins its capacity to make the value in different time frames.
3. Business Model: What is the firms' business model?
4. Risk and opportunities: Risk and opportunities which affect a company's value creation process over time and how an organization interacts with these elements.

5. Strategies and Resource Allocation: What do the organization goals, and how does it want to get there?
6. Performance: To what extent an entity is successful in achieving its objectives and how it can influence various capitals such as financial, intellectual, social, human, manufactured, and natural capitals.
7. Outlook: The challenges and obstacles an entity is going to encounter in the future for the implementation of its strategies and ramifications of its future performance and business model.

An integrated report can include all useful corporate information. It is not only an annual financial report with mandatory and voluntary disclosure, footnotes, and key performance indicators but a more complete and unique report (Eccles and Krzus, 2010) disclosing non-financial results and drivers of performance relating to new information demands on stakeholder relationships. As a result, such a report will help reduce information asymmetry, enhance acceptable environmental, social, and governance practices, thus contributing to reducing the expectation gap between the stakeholders and the company itself and reconciling the outside world and the business world.

Two separate bodies have undertaken the concept of integrated reporting, the International Integrated Reporting Council (IIRC), and the King Report on Governance for South Africa (King III). From March 2010, preparing an integrated report became recommended for organizations listed on the Johannesburg Stock Exchange. Somewhere else on the planet, a few associations are trialing arrangements of an incorporated report with the idea, process, detailing yet developing, and with no brought together portrayal of this approach (Abeysekera, 2013). While sustainability reports rely on the environmental and community effects from the perspective of the stakeholders, the IIRC offers a more complete and integrated view focusing on value creation from the perspective of natural, social, manufactured, human, and intellectual capital, thus believing an extending and a more effective reporting system (Stubbs and Higgins, 2018).

Audiences of integrated reports are employees, investors, customers, society, and non-governmental organizations that are affected by the organization's activities. The reason is that the decisions made in the business management process affect all stakeholders in the organization. Therefore, companies should recognize this information as an essential interest of stakeholders in their annual reports. Conventional mandatory and voluntary disclosures are not enough. To understand stakeholders' most critical expectations, organizations need to have several strategies to connect with them and follow their desires (Joubert, 2014). Different stakeholders can use an integrated report in order to make informed decisions about investing in the company or assessing its ability to create value in different periods and on its sustainability over time (Kılıç and Kuzey, 2018).

Before and in parallel to the IIRC's publication, integrated reporting framework practitioners as Adams (2017) and academic precursors, as Eccles and Krzus (2010 and 2014) criticized conventional financial reporting and proposed the ways and means for building an integrated report. In 2016, Dumay *et al.*, in an extensive structured literature review, examined numerous studies stressing the essentially normative and conceptual aspects of current research and placed emphasis on the urgent need for empirical studies.

2. Research design, methodology, and related questions

2.1. Research procedure and context

According to the neoclassical theory of the firm and agency theory, the main purpose of any entrepreneur is to maximize incomes and business value. Different firms, companies, and enterprises attempt to combine resources to produce and sell goods and services with the prime target of creating value and gaining an essential part of the market concomitantly with increasing profitability. However, companies not only create value but also have the potential to preserve and erode it and be competitive is no longer being exclusively related to formal competences and tangible assets. Intangible assets and intellectual competencies have a more critical role in any medium and large enterprise's investment and production processes nowadays. Moreover, intangible assets are vital in creating a new relationship with the client. For every entity, knowledge is a strategic resource to progress in the field of science and technology and indeed proves the role of expertise in the global economy. Knowledge has long been critical to organizations as they strive to gain and maintain a competitive advantage (Vreja, 2011). In the 17th century, with the rapid development of high technologies in the world, the pattern of global growth had been changed fundamentally. Since the 19th century, knowledge has been used as the most critical investment alternative to financial and physical capital. Knowledge-based businesses are the base of most advanced technology and innovative processes in products, services, or operations and often serve actively as agents of sustainable growth and CSR achievements. KBOs are companies, which are active in a competitive environment with knowledge creation and innovation to create value (Rouhani and Gharachorloo, 2016). What differentiates hi-tech KBOs from others is that knowledge has the highest value of their assets and plays a strategic role.

This research was conducted in the EPIL Company that is one of the most prestigious Iranian companies. As a case firm, EPIL co can be introduced as a hi-tech KBO, comprising 20 different laboratories and testing facilities, which is serving in the test, inspection, and certification field with highly valued expertise. This hi-tech KBO has more than 18 years of experience in this field and is run by 60 qualified engineers who are recognized vastly in Iran, the Middle East, and other countries worldwide. EPIL's staff performs different types of tests, including Ex, IP, safety, low voltage, high voltage, temperature rise, EMC, and environmental tests. EPIL proves its competence as an independent testing service provider by its accreditation certificate according to ISO/IEC 17025. The rationale for choosing EPIL as a case company is that it deals with a variety of stakeholders. The organization is a private sector company, and its 75 shareholders are from the most famous industrial universities in Iran, research centers, manufacturing (public and private), and commercial companies. Its clients are manufacturers, designers, and import/export organizations that are active in electrical, telecommunication, medical, oil, and gas sectors (EPIL.ir, 2018). The members of the "Board of Directors" of EPIL are five individuals who are elected every two years by the annual general meeting. Therefore, five members of the board of directors are chairmen of joint-stock companies. The other governance body members, the "Supervisory Committee" of EPIL, are six individuals (university professors) who are being appointed by the board of directors every two years.

This research applies a mixed methodology to justify both qualitative and quantitative methods to escalate each methodology's strengths and reduce their weaknesses. Considering that complex issues are involved in integrated reporting, the research uses a sequential exploratory method to explore the issues fully. This study's exploratory sequential design includes an initial qualitative case study, an instrument development phase, and a quantitative survey. As the main purpose of the existing study is

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9 to investigate the appropriateness of an integrated reporting system for hi-tech KBOs, it is practical and
10 applied research.

11 *2.2. Theoretical Framework*

12 The case study concentrated on the 'how' and 'why' questions, and that is why it is suitable for distinct
13 and exploratory investigations. The case study research approach should involve a framework to guide
14 the research process and be developed by the data gathered from research (Lodhia, 2015). The theoretical
15 perspective of the current research is provided through the application of the practice theory.

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17 Theory of practice (Schatzki, 2005) is based on social science and states that "individual behaviors are
18 primarily performances of social practices" (Schreiber, 2014). Practices are in forms of social relations
19 and cannot be imagined as a set of individual actions that lie only in the performer's mind (Flores et al.,
20 2015), which implies that companies should be studied in accordance with the human, social, and group
21 context in which they operate instead of concentrating on individual perceptions and actions. Micro-
22 processes that make up everyday interactions (where social action is both conditional and constitutive at
23 the same time) can be analyzed using this theory (Schreiber, 2014). Practice theory has been applied to
24 understand management accounting practices. Based on practice theory, Lodhia (2015) examined how a
25 customer-owned bank moved to integrated reporting, providing insights for other business owners
26 seeking to implement the system. Arsen and Chapman (2007) used this theory to understand
27 management control systems' structure in a restaurant chain. Strategic management research has used
28 practice theory to gain an understanding of organizational practices (Whittington, 2011; Lodhia, 2015).
29 A practice has social nature, and you interact with people you are in direct connection with and other
30 people performing this practice. Practices involve body and mind activities and are based on human
31 doings and sayings (Schreiber, 2014). There are three links to hold the saying and doing together in
32 practice: Practical understanding: Summing up what to do and how to identify and react to something.
33 Rules: Explicit rules of how to do things, what is permitted, and what is not. Teleoaffective structures:
34 Teleoaffective structures are made up of teleological and practical and have a goal-oriented structure
35 where different views could influence the goal. Exercises can be divided into two types: integrated and
36 dispersed, as the latter are elements in integrated practices (Gram-Hanssen, 2010).

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38 Integrated reporting as an integrated practice requires an understanding of financial, social, and
39 environmental matters. After that, rules and regulations governing business practice depicting the
40 financial, social, and environmental issues need to be disclosed. In this reporting, the Teleoaffective
41 structure is about understanding economic, social, and environmental matters (Lodhia, 2015).

42 Figure 1 illustrates the research procedure giving an overview of the sequential approach followed.
43 The linkage between the practical understandings, rules, teleoaffective structure, and the research
44 phases (shown in figure 1) will be elaborated in the next chapters.
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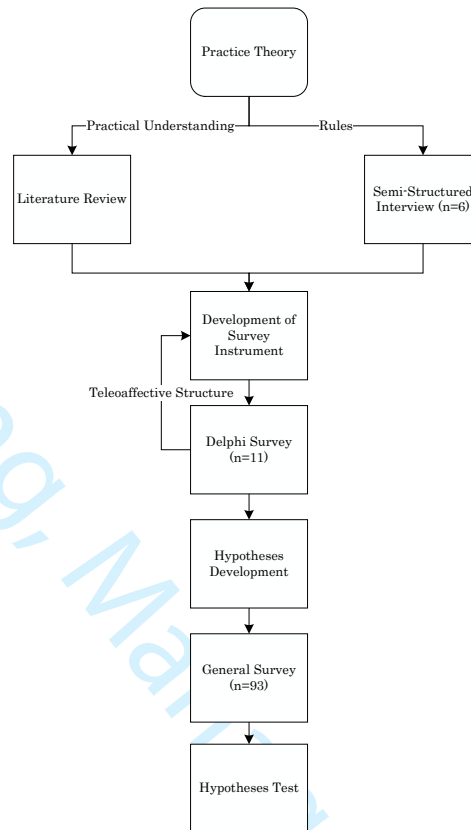


Figure. 1 Research procedure

2.3. Semi-structured interviews.

The study's opening part is a qualitative exploration of the items to be included in an integrated report by collecting data from the literature review, as mentioned in Table 1. Then in order to determine the specific reporting items for the case hi-tech KBO, interviews were conducted with six managers (over 11) from the corporate finance, R&D, technical, certification, quality control, and marketing strategy departments of the case company (EPIL Co.). Interviews were held with the key managers, who have an acceptable level of knowledge and expertise in corporate reporting and hi-tech KBOs. Which means all have a managerial education or have participated in certain managerial courses. In addition, they have been involved in the preparation or review of the EPIL annual report.

The snowball sampling technique was used and during which the initial interview was used as the basis for access to other key organization staff related to corporate reporting. Meanwhile, ethical standards were met, and the interviewees confirmed the interviews.

At the beginning of the process, detailed information regarding the research context and goal was given to the experts, and their questions about the nature and climate of the study were answered in

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9 detail. Interview questions were derived from the prior literature on materiality in corporate financial
10 reporting and literature on the integrated report. Questions allowed underlying themes and concepts to
11 be explored while avoiding imposing the researcher's views on the interviewees. To retain an exploratory
12 focus, general questions regarding materiality were asked, which formed a discreet section of a broader
13 study of integrated reporting. Interview questions were open-ended as the following:

14 (1) What is your current job position? (2) How long have you been in this role? (3) What type of
15 information is disclosed in your firm's annual report? (4) What are the main specifications of hi-tech
16 KBOs needed to be disclosed in the annual report? (5) Are there any other issues that you would like to
17 raise?

18 Each interview lasted about 30 minutes and was performed face to face. All of the six interviews were
19 conducted in Persian. Two of the interviewees were female. Regarding the semi-structured nature of the
20 interview, the experts were allowed to comment on various aspects of the research and about the factors
21 affecting the integrated reporting system. The interviews were recorded, and the recordings were then
22 transcribed. Notes were taken through the interview to make maximized the use of experts' comments.
23 At the end of the interview, the experts were asked to express anything probably ignored during the
24 interview.

25 *2.4. Delphi Method*

26 As the second phase of the study, the idea was to identify and categorize integrated reporting items.
27 Therefore, the Delphi method was used to design an instrument for the assessment of the relevance of
28 integrated reporting for hi-tech KBOs.

29 A panel of eleven experts (comprising the members of the board of directors, members of the
30 supervisory committee, and managers) with different proficiencies was used for this purpose. Delphi
31 technique is designed to predict and help in decision making through survey rounds, data collection, and
32 overall consensus. Every expert was confidentially given a questionnaire containing the new criteria.
33 They were asked to assign a score ranging from 1 to 9 to each criterion. In the second step, surveys were
34 collected, and measures with an average rating below seven were removed. The remaining criteria were
35 sent to the experts in the form of a new survey. The procedure was repeated until a set of criteria with a
36 score higher than seven was achieved (Powell, 2003). It should be mentioned that controlled feedback
37 was fully considered through Delphi steps, meaning that each expert's comments were submitted to
38 others. Therefore, the expert panel members were able to modify their comments based on the results
39 obtained in the previous step. Finally, three rounds took place to identify the research hypotheses.

40 *2.5. Structural equation modeling, external and internal assessments of the model*

41 The quantitative phase follows up for the explanation and interpretation of the qualitative findings.
42 A structured questionnaire was used to investigate the opinions of managers of hi-tech firms in the
43 Iranian electrical and energy industry. Therefore, all 93 CEOs of the "Knowledge-based Committee of
44 Iranian Electrical Industry Syndicate" were chosen. Their perception of the relevance of the content
45 elements in an integrated report was investigated. Homogeneous sampling, which has been used in the
46 quantitative phase, focuses on participants who share similar or specific characteristics (Etikan *et al.*,
47 2016). The reason for choosing homogeneous sampling is that all 93 members are already hi-tech KBO's
48 and have common characteristics. In the meantime, this committee represents a great sample of Iranian
49 hi-tech KBO's in the electrical and energy industry.

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9 With the structural equation model, the global and simultaneous relationships between the latent
10 variables, precisely the reporting items to be disclosed in the <IR>, aimed to reveal the interviewees'
11 perceptions from their answers to the questions expressed by the measured variables of the
12 questionnaire. This was followed by testing the reliability and validity of these observed variables in
13 order to evaluate whether they correctly measure the latent and explicative variables i.e. the validity of
14 the external model. Finally, the model's internal validity, its predictive value, was checked by using the
15 PLS technique.

16 17 **3. Results**

18 The paragraphs hereafter report the results of the sequential research procedure illustrated earlier
19 in Figure 1.

20 21 *3.1. Qualitative phase: EPIL case study*

22 This study is based on a deductive approach, and the research objectives and interview questions
23 guided the coding of themes. Interview themes, sub-themes, as well as sample interviewees' quotes are
24 summarized in Table 2. The interview data were categorized into two themes reflecting the second
25 research objective. The first theme is hi-tech KBOs specific issues. The sub-themes are (1) Educational
26 level of board members, (2) Educational level of staff, (3) Registered patents, (4) Hi-tech
27 products/services, (5) Total sales of knowledge-based products/services, (6) Ratio of knowledge-based
28 Products/Services/Staff, (7) Ratio of knowledge workers, (8) Technical know-how, (9) R&D investment,
29 (10) Intellectual property, (11) Conformity with standards, (12) Permits and approvals, (13) Awards. The
30 second theme is annual report contents of hi-tech KBOs, and the sub-themes are (1) Directors report, (2)
31 Shareholder list, (3) Balance sheet, (4) Income statement, (5) Equity changes, (6) Cash flow, (7) Auditor's
32 report, (8) Performance, (9) Change in a number of employees, (10) Future plan. In this phase, the rules,
33 including regulations or guidelines for business practices and how financial, social, and environmental
34 issues should be disclosed, were identified. In addition to the rules of financial statement disclosure, the
35 general rules related to independent labs are also adhered to by EPIL. The organization should abide by
36 the principles and rules of transcendence, such as impartiality and ethical behavior, democratic control,
37 non-discrimination, ongoing training, innovation, centrality, trust, accountability, and quality.
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Table 2. Interview themes, sub-themes, and sample interview quotes

Themes	Sub-themes	Interviewees						Sample quotes
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Specific issues of hi-tech KBOs	The educational level of board members		■	■		■	■	<ul style="list-style-type: none"> • "Stakeholder's information needs as well as their perspectives and their expectations of businesses, are changing" (Interviewee 6). • "Some information's of KBO's are their secrets and not relevant to be disclosed"(Interviewee 2).
	The educational level of staff	■	■	■	■	■	■	
	Registered patents			■	■	■		
	Hi-tech products/services		■	■	■		■	

	Total sales of knowledge-based products/services	■		■	■		■	<ul style="list-style-type: none"> • "Nowadays, shareholders demand assurance on the quality of products which can be proved by acquiring international quality certificates"(Interviewee 5).
	The ratio of knowledge-based Products/Services/Staff	■	■	■	■		■	<ul style="list-style-type: none"> • "If we claim that our company is Hi-tech, then we should have something to say about the education level of our managers and staff"(Interviewee 2).
	The ratio of knowledge workers		■	■	■		■	<ul style="list-style-type: none"> • "Knowledge workers are expensive, and we need to disclose how we plan to keep them satisfied"(Interviewee 3).
	Technical know-how		■	■	■	■		<ul style="list-style-type: none"> • "Our stakeholders need to be informed that we are becoming better and better every year regarding conformity according to international standards"(Interviewee 4).
	R&D investment		■	■	■			<ul style="list-style-type: none"> • "If you disclosed the non-financial report and insisting on their importance and on the other hand neglecting financial information, you will lose your shareholders trust. Monetary information is always important"(Interviewee 1).
	Intellectual property		■	■	■	■		
	Conformity with standards	■	■	■	■	■	■	
	Permits and approvals	■		■		■	■	
	Awards	■	■	■	■	■	■	
Annual report contents of hi	Directors report	■	■	■	■	■	■	<ul style="list-style-type: none"> • "People invest to make returns. The financial report is critical. It is imperative to report financial performance. If the company is making money, then it seems everything is ok" (Interviewee 1).
	Shareholder list	■				■	■	<ul style="list-style-type: none"> • "Nature of dealings with different shareholders and its outcomes need to be disclosed in a board report"(Interviewee 1).
	Balance sheet	■	■			■		<ul style="list-style-type: none"> • "Performance is not always seen in the income statement. We may
	Income statement	■	■			■		
	Equity changes	■		■				
	Cash flow	■		■			■	
	Auditor's report	■	■	■	■	■	■	
	Performance	■	■	■	■	■	■	
Change in number of employees	■		■	■			■	

									<p><i>perform precious actions, and the consequences can be seen in future years."</i> (Interviewee 3).</p> <ul style="list-style-type: none"> <i>"To determine what to be included in KBO's annual report, we have to look at modern countries and follow their footsteps"</i> (Interviewee 2).
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Regarding the specificities of hi-tech KBOs, managers' quotes are significant by themselves. Unanimity and consistency on the following items must be noticed: education level of staff, the ratio of knowledge, conformity with standards, rewards, director reports, audit report, performance, and future plan. These items relate to non-financial drivers of performance. Financial information follows.

3.2. Delphi Phase: "Most" critical items determined

The Delphi phase's objective was to identify the most critical items to be included in the case hi-tech KBOs' annual integrated report. To do this, the fundamental concepts of integrated reporting derived from the literature review (15 constructs and 152 questions) were summed up with interview themes and sub-themes (2 constructs and 23 questions) and subjected to the Delphi process. The Delphi instrument, which was obtained from the literature review and interview results, consisted of 17 constructs (reporting elements) and 175 questions. The scores obtained from the first, second, and third Delphi rounds were entered into SPSS software in order to calculate their averages and standard deviations. The consensus level was determined based on an average of more than 7 and a standard deviation of less than 1.5 (Verkade *et al.*, 2010).

Round one of the Delphi study had an 82 percent response rate. Nine participants over eleven responded. The scoring for some items was above the 80 percent cut-off mark. The mean combined score and standard deviation for 17 reporting elements (constructs) and 175 questions were calculated. The first Delphi round results were categorized into three groups: Calculated mean more than 7 and a standard deviation of less than 1.5 (selected criteria); calculated mean less than 7 and a standard deviation of less than 1.5; the standard deviation of more than 1.5.

The results of round 1 summarized in Table 3 show that the experts suggested changes and adjustments. They combined some constructs and questions, which resulted in 7 constructs and 55 items.

Table 3. Scores of experts in the first Delphi survey round

Construct	No. of measures	Standard deviation < 1.5, Mean > 7	Standard deviation < 1.5, Mean < 7	Standard deviation > 1.5
Reporting Parameters	5	0	2	3

Construct	No. of measures	Standard deviation<1.5, Mean>7	Standard deviation<1.5, Mean<7	Standard deviation>1.5
Organizational Overview and External Environment	15	4	7	4
Governance	18	3	6	9
Business Model	10	4	6	0
Strategy and Resource Allocation	9	4	2	3
Opportunities and Risks	8	3	3	2
Performance	13	5	4	4
Future Outlook	7	5	1	1
Remuneration Policies	5	0	3	2
Analytical Commentary	8	1	5	2
Financial Capital Indicators	6	2	1	3
Natural Capital Indicators	20	1	7	12
Human Capital Indicators	4	1	2	1
Social and Relationship Capital Indicators	21	2	6	13
Stakeholders	3	3	0	0
Specific Issues of hi-tech KBO's	13	10	1	2
Annual Reports of hi-tech KBO's	10	7	1	2
Total	175	55	57	63

In order to identify the "most critical" items, two other rounds took place. The questionnaire was sent back to the same nine people (100% response) to re-vote and score for tracking the changes. Also, information about the tendency and dispersion of the previous scores as well as the comparison of the scores of participants, were provided. Frequencies and percentages were calculated by SPSS software, and the cut-off level of 80% was considered (Al-Muallem *et al.*, 2016). Table 4 shows the final scores of experts in the second and third Delphi rounds.

Table 4. Scores of experts in the second and third Delphi survey round

Construct	No. of measures	Second round			Third round		
		Standard deviation<1.5, Mean>7	Standard deviation <1.5, Mean<7	Standard deviation >1.5	Standard deviation <1.5, Mean>7	Standard deviation <1.5, Mean<7	Standard deviation >1.5
Organizational Overview and Governance	10	6	1	3	4	2	4

Construct	No. of measures	Second round			Third round		
		Standard deviation < 1.5, Mean > 7	Standard deviation < 1.5, Mean < 7	Standard deviation > 1.5	Standard deviation < 1.5, Mean > 7	Standard deviation < 1.5, Mean < 7	Standard deviation > 1.5
Organization Business Model	8	4	2	2	3	3	2
Organization Strategies and Resource Allocation	7	5	0	2	6	0	1
Organization Performance	8	7	1	0	5	1	2
Organization Opportunities and Risks	5	5	0	0	4	0	1
Organization Future Outlook	10	6	3	1	5	1	4
Annual Report of hi-tech KBO's	7	5	0	2	5	0	2
Total	55	38	7	10	32	7	16

Results of round three of the Delphi method (after combining and/or deleting some constructs and questions) show that the reporting elements "Organizational Overview and External Environment" with 15 measures, "Governance" with 18 measures, and "Stakeholders" with 3 measures are being combined to "Organizational Overview and Governance" with 4 measures. The number of questions of "Organization Business Model" has been reduced from 10 to 3. The reporting element, "Organization Strategies and Resource Allocations," now has 6 questions instead of 9. The reporting element of "Organization Performance" with 13 measures now has 5 measures. The "Organization Opportunities and Risks" now have 4 measures instead of 8. The reporting element, "Organization Future Outlook," contains 5 measures instead of 7. Finally, the reporting elements "Specific issues of hi-tech KBO's" with 13 and "Annual Reports of hi-Tech KBO's" with 10 questions are being combined to "Annual Reports of hi-tech KBO's" with 5 questions.

Therefore, the consensus was made on 32 items (the group with a standard deviation lower than 1.5 and a mean higher than 7). The authors understand the teleoffective structure related to integrated reporting for the case company through three Delphi rounds. Being an innovative and trusted lab (as a teleoffective structure) is about developing an organizational culture that emphasizes how it functions. The board of directors must determine the organization's ethical values concerning economic, social, and environmental responsibilities, and everyone is responsible for reaching the corporate vision and values.

The result of the third round of Delphi consists of 7 reporting elements and 32 questions summarized in Table 5.

Table 5. Constructs and measures after consensus.

Items with consensus		Mean	SD	Median
Organizational Overview and Governance				
1-1	Objectives, vision, mission, and values	7.67	1.32	8
1-2	Governance structure	7.22	1.30	7
1-3	Culture and ethics	7.78	0.83	8
1-4	List of stakeholders	6.11	1.05	6
Organization Business Model				
2-1	Different types of capitals	7.89	1.05	8
2-2	Main activities	8.33	0.71	8
2-3	Key inputs, outputs, and outcomes	7.44	0.73	7
Organization Strategies and Resource Allocation				
3-1	Strategic goals	7.78	1.30	8
3-2	Strategic decision-making process	8.11	1.36	9
3-3	Organizational Competencies	7.78	0.67	8
3-4	Key performance indicators	7.56	1.33	7
3-5	Key risk indicators	6.89	1.45	7
3-6	Resource allocation plans	7.22	0.97	7
Organization Performance				
4-1	Past, current and future performance	8.11	0.93	8
4-2	Effects on capitals	8.11	0.93	8
4-3	The outcome of key performance indicators	8.11	1.05	8
4-4	The outcome of key risk indicators	7.89	0.78	8
4-5	Financial ratios	8.11	1.05	8
Organization Opportunities and Risks				
5-1	Specific opportunities and risks that affect the Organization	7.78	0.97	7
5-2	Internal and external sources of opportunities and risks	8.00	0.87	8
5-3	Plan to create value from opportunities	7.78	0.97	7
5-4	Risk management plan	8.44	0.88	9
Organization Future Outlook				
6-1	The anticipation of changes in the external environment	8.33	0.87	9
6-2	Plan to equip against critical challenges and uncertainties	8.22	0.67	8
6-3	Future performance targets	8.33	0.71	8
6-4	Internal forward-looking reflections	7.11	1.27	7
6-5	Employee forward-looking reflections	8.00	1.32	8
Annual Report of hi-tech KBO's				
7-1	Directors report	8.00	1.00	8
7-2	Shareholder list / Mutual Transactions	7.89	1.17	8
7-3	Financial Report / Auditors Report	8.11	0.78	8
7-4	List of hi-tech products/services	8.56	0.53	9
7-5	List of registered patents / Acquired certificates	7.78	0.83	8

3.3. General survey: SEM and assessment of the model

The categories above, the constructs 1 to 6 in Table 5, were considered as hypotheses. They are represented by the latent variables (H1 to H6) illustrated in Figure 2, and their relevance perceived by the 93 interviewees for inclusion in the Annual Report of hi-tech KBO's was checked. These variables are Organization Overview and Governance (H1) Organization Business Model (H2) Organization Strategies and Resource Allocation (H3) Organization Performance (H4) Opportunities and Risks (H5) Organization Future outlook (H6).

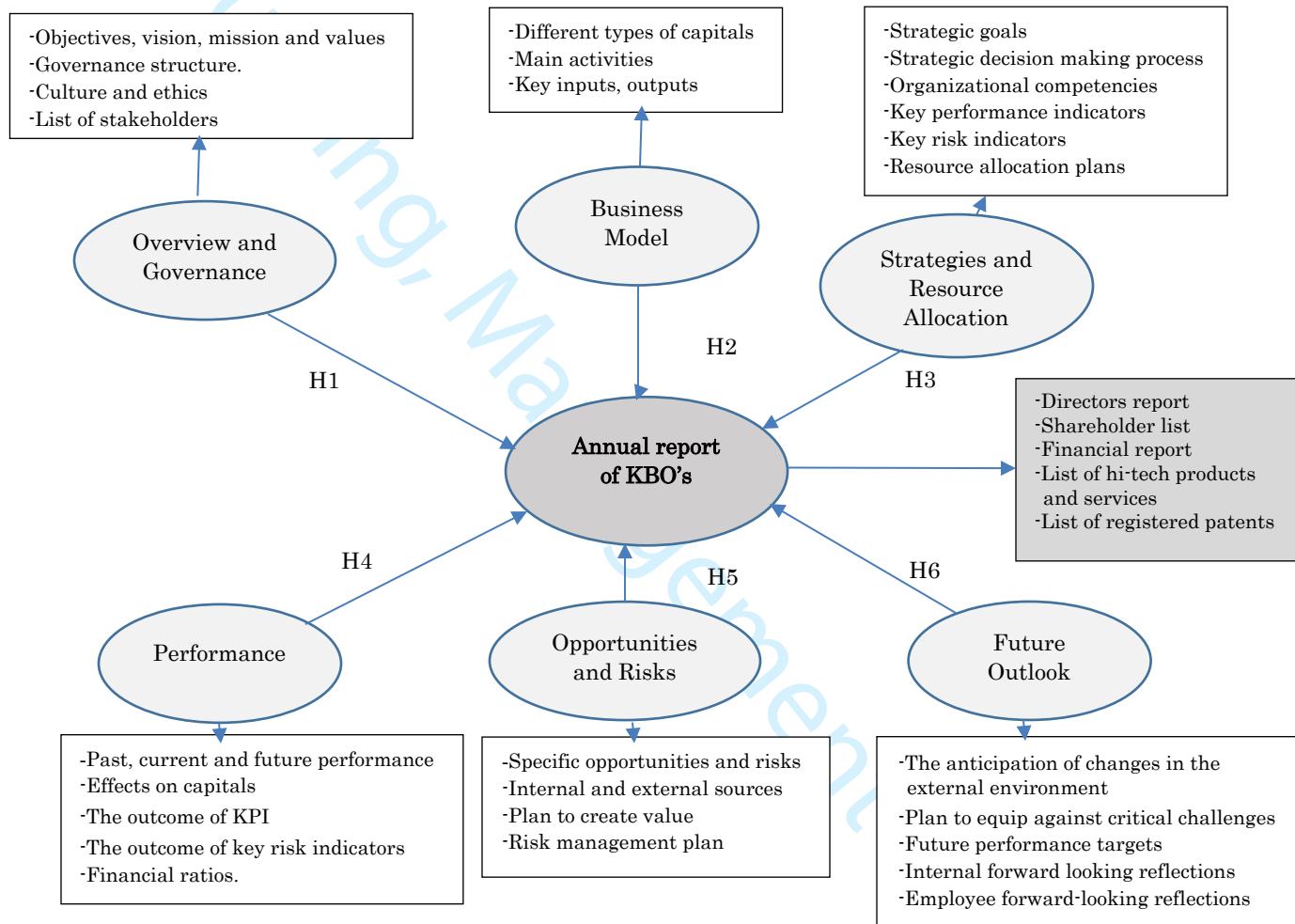


Figure 2: Items with consensus, variables, and hypotheses of the model

As we used the partial least squares structural equation modeling (PLS-SEM) method instead of covariance-based structural equation modeling, the evaluation of the PLS-SEM model was carried out in

two stages, including the evaluation of the measurement model (the external model including the relationship between latent and observed variables) and the evaluation of the structural model (the internal model including the relationship between latent variables) Hair *et al.* (2011). With Cronbach's alpha (>0.7) composite reliability (>0.7) and consistent reliability ($\rho_A > 0.7$), statistical tests for reliability and validity are significant, showing that the measurement (outer) model is reliable (Table 6).

Table 6. Measurement model reliability and validity

Construct	Cronbach's alpha	ρ_A	Composite reliability	Average variance extracted	Discriminant validity
Overview and Governance	0.843	0.848	0.897	0.687	YES
Business Model	0.742	0.755	0.852	0.658	YES
Strategies and Resource Allocation	0.848	0.883	0.885	0.565	YES
Performance	0.871	0.881	0.907	0.662	YES
Opportunities and Risks	0.835	0.840	0.891	0.672	YES
Future Outlook	0.873	0.928	0.907	0.661	YES
Annual Report of hi-tech KBO's	0.754	0.770	0.837	0.509	YES

Furthermore, the content validity initially determined by the professionals with the Delphi model was confirmed by Fornell-Larcker's criterion assessing convergent validity (>0.5) and discriminant validity (Table 7) that measures the degree to which a construct belongs to itself and not to other constructs.

Table 7. Fornell-Larcker's criterion for discriminant validity

Item	Annual Report of hi-tech KBO's	Business Model	Future Outlook	Opportunities and Risks	Overview and Governance	Performance	Strategies and Resource Allocation
Annual Report of hi-tech KBO's	0.814						
Business Model	0.605	0.811					
Future Outlook	0.476	0.474	0.813				
Opportunities and Risks	0.720	0.347	0.321	0.820			
Overview and Governance	0.719	0.246	0.224	0.437	0.829		
Performance	0.807	0.493	0.547	0.417	0.500	0.814	
Strategies and Resource Allocation	0.592	0.223	0.349	0.356	0.463	0.446	0.752

3.4. Predictability of the model and relationships between the constructs: Inner Model assessment

As the final step, we evaluate the structural model and assess the model's ability to predict and evaluate the relationships between the constructs (Hair *et al.*, 2017). The relations among research variables for every hypothesis were tested using the PLS technique, and the final reflective-formative PLS path model consisting of the inner model (the structural model), and outer model (the measurement model) is depicted in Figure 3.

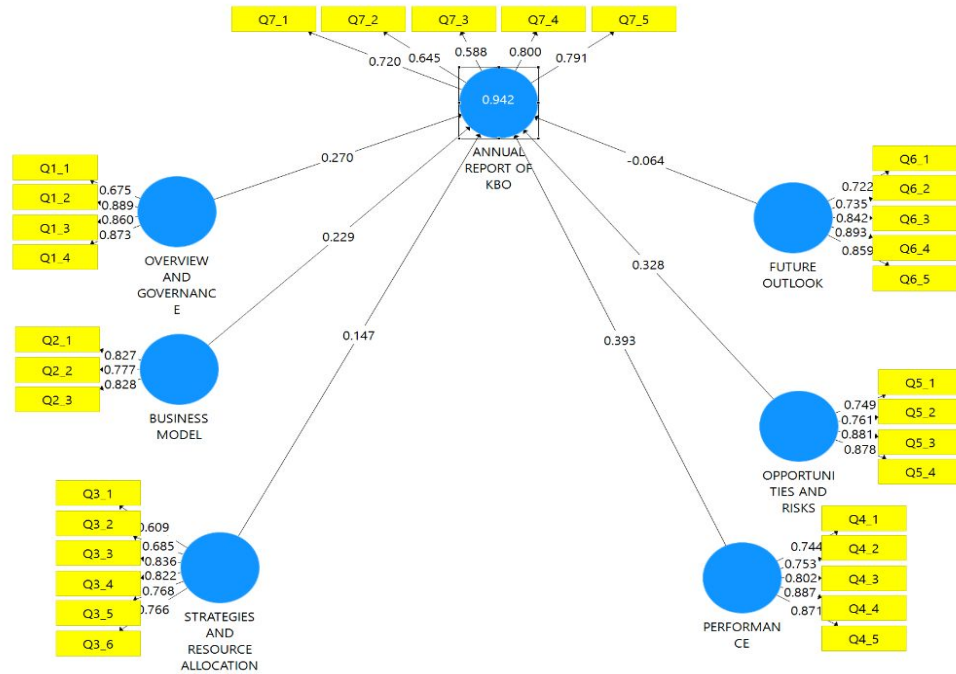


Figure 3. A reflective-formative PLS path model consisting the inner model (the structural model) and outer model (the measurement model)

Bootstrapping as a nonparametric procedure is further used to test the statistical significance of outer weights (Hair *et al.*, 2017). Figure 4 shows the PLS model in significant coefficient mode (bootstrapping). The relation between constructs is shown by path coefficients. For hypotheses testing, path coefficients signs, size, and the statistical significance of the latent variable and its dependent variables are being considered. For significance testing, the two-tailed t-test is used with a significant level of 5%; therefore, if t-statistics is greater than 1.96, the path coefficient will be considerable (Wong, 2013). Table 8 shows the t-statistics of the path coefficients for the inner model:

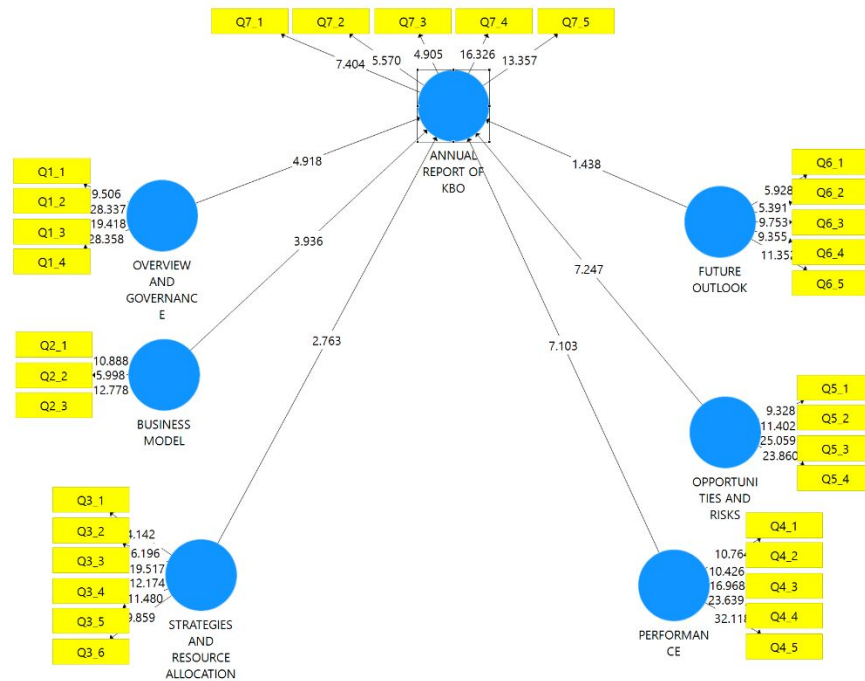


Figure 4. PLS model in significant coefficient mode (bootstrapping)

According to Figure 3 through 4 and Table 8, the only item, which has a p-value of more than 0.05, is the organization's future outlook. Its path coefficient is -0.064, which is far lower than 0.1. Therefore, hypotheses H1 through H5 are accepted, and the hypothesis H6 is rejected. It also appears that path coefficients and T statistics for Performance, Opportunities, and Risks have the highest values, which is not surprising because they are mandatory and appreciated by financial analysts and investors.

The variable Overview and Governance which synthesizes sustainable elements: Objectives, vision mission, and values, governance structure, culture and ethics, list of stakeholders are positively and significantly linked to an annual report showing that these considerations are perceived important and have to be integrated into the annual integrated report of KBOs. Therefore, reports on sustainability information come just after performance and opportunities and risks, preceding information related to Business Model and Strategies and Resource allocation. This demonstrates the paramount importance recognized to sustainability issues by qualified practitioners and experts in this industry.

Table 8. Summary of hypotheses testing

Hypothesis	Independent variable	Dependent variable	Path coefficient	T statistics	P-values
H1	Overview and Governance	Annual Report of hi-tech KBO's	0.270	4.918	0.000
H2	Business Model	Annual Report of hi-tech KBO's	0.229	3.936	0.000
H3	Strategies and Resource Allocation	Annual Report of hi-tech KBO's	0.147	2.763	0.006
H4	Performance	Annual Report of hi-tech KBO's	0.393	7.103	0.000
H5	Opportunities and Risks	Annual Report of hi-tech KBO's	0.328	7.247	0.000
H6	Future Outlook	Annual Report of hi-tech KBO's	-0.064	1.438	0.151

4. Discussion and conclusion

The article's main objective was to elaborate a consensus on non-financial and financial information in an integrated report for a hi-tech KBO, based on practitioners' validation during the different research phases. In the beginning, EPIL Company managers' expertise was used and later that of experts in Iran's electrical industry.

4.1. Practical implications for hi-tech KBOs

As it is summarized in Table 8, hypotheses H1 through H5 are confirmed, and the hypothesis H6 is rejected. The authors justify the reasons for the acceptance or rejection of the hypotheses as for the following: Focusing on the mission and vision of organizations and examining the impact of external factors, namely issues of sustainability: environmental, social, and governance aspects that affect the ability to create value in an organization is important for the hi-tech KBOs. This is almost perfectly in line with the recommendations of the IIRC International reporting framework. It is also important to provide insight into how matters like the organization's leadership structure and particular actions to influence and monitor the organization's strategic direction are linked to its ability to create value (Busco *et al.*, 2013; IIRC, 2013). Therefore, the Organization Overview and Governance are considered material, as the other accepted ones, and confirmed to be included in the hi-tech KBOs annual report. As the business model provides useful information about the organization's inputs, activities, outputs, and outcomes aiming to fulfill its strategic goals, it is relevant to be included in the annual report. Strategies

and resource allocations is also an important item. Expressing the short-term, medium-term, and long-term strategies of the organization, the activities carried out to achieve them, how resources are allocated to them, and how to evaluate the number of achievements is very useful. The organization's performance is another relevant item for hi-tech KBOs. The reason is that it includes qualitative and quantitative information such as (1) Performance indicators related to goals and opportunities, (2) Descriptions of the concepts and methods used in their collection, (3) The positive and negative effects of the organization on its assets, (4) The relationship between past and present performance and vision. Hi-tech KBOs are subjected to different types of opportunities and risks, and their disclosure is not only mandatory but also very helpful. When corporations see risk and opportunity as two sides of the same coin, they need to discuss them, including their interdependencies, together (Busco *et al.*, 2013; IIRC, 2013).

The company's view on predicted changes in future outlook should rely on a clear analysis of changes in the external environment in different time periods and how it is currently equipped to respond to critical challenges and uncertainties that are likely to appear. The release of this new type of information should attract and retain talented people, satisfy investors and banks, reduce capital cost, and boost the company's reputation. It may also help managers at the executive committee, and board levels start to comment and discuss data existing in the company having a strategic content but not collected so far, thus facilitating the emergence of competitive advantage and barriers to new competition. Regardless of its importance, Future outlook was the weakest content element and rejected to be disclosed in the hi-tech KBOs annual report. This result is in accordance with Wild and van Staden (2013) and Melloni (2015) findings. This is not surprising because the future is characterized by still more uncertainty and remains unpredictable mainly in a global world. Also, many companies worldwide, especially in "continental countries," are risk-averse and prefer opacity versus transparency. In the authors' opinion, Iranian hi-tech KBOs are unwilling to provide all future outlook information suggested by the integrated reporting framework. Companies may vary substantially in precisely what information they regarded as crucial. Given the fact that the future of business in Iran is unclear, companies tend not to outline their prospects.

4.2. Theoretical and social implications

As the business environment has dramatically changed over the last decade, organizations must evolve accordingly. Integrated reporting as an alternative to mandatory and voluntary market-driven non-financial and financial disclosures is probably one of the best ways to make sure that companies meet medium and long-range sustainable targets. This paper confirmed that a practical but theoretical approach could be utilized to understand the relevant items to be included in a hi-tech KBO's integrated report. In the meantime, the exploratory mixed design method is well suited for such a complicated subject. It should be mentioned that in the material items determination process, both internal and external stakeholders, as it was done in this research, need to be actively contributed. Our approach and findings on the perceptions by EPIL and electrical industry experts in Iran show that the existing IIRC integrated reporting framework is relevant and helpful. It will be useful for the different types of companies in different countries, but, as any conceptual framework has to be slightly adapted to company context. We thus agree with Eccles and Kruzus (2010 and 2014), Idowu *et al.* (2016), Stubb and Higgins (2018), and Kiliç and Kurzey (2018) that integrated reporting offers a more complete and effective view on value creation. That will certainly help stakeholders make informed decisions about company sustainability over time. If accepted and encouraged by regulatory bodies and stakeholders, its nature and adoption process might have a significant effect on the future of capitalism (Eccles and Spiesshofer, 2016). Being more informative by their recognition and disclosure in the annual report, the audited non-financial information conveyed to sophisticated users will certainly be superior than intermittent

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voluntary disclosures of non-financial information that are often being used by top managers as bonding costs to reduce information asymmetry. Because of their feasibility and observed relevance, the IIRC guidelines can reduce the information gap mentioned earlier by extending the conventional reporting scope. Our results show that hi-tech KBOs have the potential to prepare a simplified, integrated report. The Organization overview, governance, business model, strategies and resource allocation, performance, opportunities, and risks are the content elements material and relevant perceived by EPIL and Iranian managers of the electrical industry to be included in the hi-tech KBOs annual report. However, the organization's future outlook is not confirmed to be included. Due to liability and competitive concerns, organizations are reluctant to provide targets, forecasts, projections, or even scenarios.

The results also confirm the consensus on Overview and Governance elements of previous studies by Dahms (2012), Ayoola (2013), Joubert (2014), Doni *et al.* (2016). Iranian hi-tech KBOs may be willing to disclose some of their non-financial information, but at a level that does not allow competitors the opportunity to abuse them. But in so doing, the risk may be that this new type of information will not be recognized by the market or deemed unnecessary by creditors and investors. In this case, the largest companies, often listed on the stock market and the most sensitive to environmental and societal issues, will not play their role as catalysts. They will accordingly limit the information provided to the strict minimum so that only the recommendation to use the IIRC framework's guidelines or the obligation to providing this kind of information by the authorities or the State becomes the only way to make these changes become a reality. This paper suggests that the fulfillment of corporate transparency for Iranian hi-tech KBOs can be achieved by the policy maker's support for integrated reporting.

The practical studies and researchers in the Integrated reporting field are focused on different types of organizations. Still, the impacts of integrated reporting on hi-tech KBOs and its implementation and perceived effectiveness had not been studied so far. Our research has suggestions for both practice and scholarly articles and adds to the previous literature on integrated reporting. It also contains empirical data through communication with managers and board members of a case company. It adds to the literature on how managers of Iranian hi-tech KBOs perceive and value content elements of integrated reporting. It reveals insight into the practice of identifying material items to be incorporated in hi-tech KBOs' integrated reports and could inform other organizations considering an integrated reporting approach. In the meantime, the outcomes and results of the existing study can be used to provide a framework for integrated reporting in hi-tech KBOs.

4.3. Limitations of the study and future research

Indeed, some limitations characterize this research: a single company, a single industry in a single country followed by an experimental design for building a new type of report. Also, EPIL was chosen as a case company, and interviewees were picked from its managers using a snowball sampling technique. EPIL is a single Iranian hi-tech KBO, which is assuredly different from other Iranian hi-tech KBOs. The snowball sampling technique was used to prevent the recognition of different perceptions held by other EPIL managers not sampled.

Considering future research perspectives in accountancy, since the integrated reporting framework is relatively new, it is an exciting area to study and need further research. The current study provided empirical insight into the relevance of integrated reporting for Iranian hi-tech knowledge-based organizations active in the electrical industry. A similar analysis but with a larger sample and different sectors to be analyzed as an explanatory factor for the relevance of integrated reporting would be of interest. The iterative and practical approach used in this study demonstrates that integrated reporting is a complicated process and requires a group of exercises. Other research avenues using eventually

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9 stakeholder theory, agency theory, legitimacy theory, resource based theory and CAPM with information
10 content studies can be used to provide a different perspective or qualitative research methods can be
11 replicated in multiple cases with different sampling models.
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