Implementing a Financial Reporting Model under the Web-Based Financial Reporting

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ABSTRACT

Web-based financial reporting language is considered as a standard in order to prepare, establish, exchange, and analyze information through the Internet. Therefore, financial reporting through the information disclosure on the Internet will lead to a better understanding of financial statements by users, which will increase the financial reporting readability. Therefore, this research aimed to provide a comprehensive index to measure implementing web-based financial reporting and to examine the effect of the current model on the company's financial reporting readability since 2007 to 2019. The assessment of the web-based financial reporting implementation model was through a questionnaire distributed among 60 experts from professors and financial managers, who had experience in the research field. Also, confirmatory factor analysis was used in order to measure the relationship between the latent variable of implementing web-based financial reporting and its measurement items. Results showed that the proposed model is a suitable indicator for the implementation of web-based financial reporting. Also, web-based financial reporting increased the financial reporting readability.

Keywords:

Implementing web-based financial reporting, Fog index, readability of financial reporting

1. Introduction

According to the statement of financial accounting concept, accounting information should be understandable, reliable and useful for decision makers. Therefore, financial reports of companies can be understood when they have high readability. Readability refers to the probability of the reader's success in reading and understanding a text or writing. Financial reporting readability is defined as the clarity of the text and success in comprehending financial information, which helps to understand the numbers and figures included in the financial statements and is of great importance. Legibility affects investors' decisions so low legibility probably hinders investors' understanding of financial reports (Hovitash et al., 2020). Accordingly, in connection with the improvement of financial reporting and the complexities of financial statements, the Commission of Securities Exchange identified two sources of accounting complexity including: 1) standards that are difficult to understand and apply, and 2) volume and variety of accounting standards[1] (Chen et al., 2022; El-Din et al., 2022).

Wb-based financial reporting[2] is considered as an efficient tool for reporting financial statements with high readability. Because this tool makes financial reports reliable and understandable (Borgi and Tawiah, 2022). In the academic literature, the importance of readability and publication of reports with high readability have always been emphasized (Bhattacharya et al., 2018; Chen et al., 2018). Another importance of the issue is that the investor may not find the information reliable due to the lack of readability and may search for other information sources, such as external sources, which is a big weakness for the business unit and the stock market; then, two general concerns, including the increase in lack of investors' relative confidence in using accounting information for making optimal investment decisions will lead to increased lack of transparency (Bagheri Azghandi et al., 2017; Rezvani and Brendak, 2018).

One of the changing technologies is the way financial information is disseminated to investors (Gao and Huang, 2020). During the financial period, financial statements are available to users through the company's website in HTML and ASCLL formats. However, none of the extracted formats enable algorithms for financial statement data. As a result, investors must manually search and extract such data. This practice makes data search tedious and error-prone for the users, and when the investor compares several companies, the processing and error costs will multiply. Therefore, using web-based financial reporting technology reduces information processing costs,increasing the financial reporting readability.

Assuming management ambiguity, managers seek to obfuscate and hide information by complicating and obscuring financial reports. Investors and shareholders usually pay attention to the structure and quality of accounting information so that they can make less mistakes in developing their expectations. If the accounting information reported by economic units is qualitative, it can be effective in investors' decision-makings (Hosseinpour et al., 2021). Therefore, innovations in information technology have increased the reliability and transparency of information using methods, such as web-based financial reporting (Borgi and Mnif, 2022). These standards will be updated annually by the international accounting and financial reporting standard setters in the form of web-based financial reporting. For example, in March 2017, international financial reporting standards required the use of online financial reporting for the companies that use this standard. The purpose of using web-based financial reporting in the capital market is uniform reporting of financial statements and more help to the users of such information and financial statements. Financial information users do not need to convert financial information from one form to another by using the web-based financial reporting, and this will increase the reporting rate as well as the extraction of reliable and efficient information (Borgi and Tawiah,

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[1] . Conceptually, companies may have a variety of accounting information with accounting standards that are not complex. It is possible to create a subjective assessment or use other tools such as text analysis to classify the complexity of each accounting standard. However, this study aimed to use web-based financial reporting data to create a broad and objective measurement that is easily replicable. Therefore, in the current research, the complexity of each accounting standard has not been subjectively classified.

[2] . Web-based financial reporting is considered as a computer language for financial reports. Its advantage over other data sources is that the information in financial reports can be automatically extracted and compared by computers without human intervention.

2022; Bartolacci et al., 2021). Therefore, the difference between the present and the previous research can be in the adoption of a new technology in companies, web-based financial reporting, to find whether it will change financial reporting readability or not.

In recent years, research has been conducted on financial reporting in Iran. For example, the relationship between the readability of financial statements and the sensitivity of investors using accounting information (Bagheri Azghandi et al., 2017), readability and the comprehensibility of accounting standards (Sarvi et al., 2017), financial reporting readability and the possibility of fraudulent financial reports (Rezaei Pitehnoei and Safari Graili, 2017) and the financial reporting readability and agency cost (Norouzi et al., 2019) have been examined; but, the impact of web-based financial reporting based on a native model on financial reporting readability has not been investigated. The results of this research are important and useful in this way. Because, despite various research on the financial reporting readability, no research has been conducted in this regard. The findings of this research will expand the literature on the web-based financial reporting and financial reporting readability. Also, the results can show the effectiveness of web-based financial reporting on financial disclosure and textual and linguistic analysis of reporting.

2. Theoretical foundation
2.1. Web-based financial reporting

Web emergence made companies reconsider their information disclosure and dissemination strategies since the web has more flexibility in the presentation and variety of information than traditional tools (Sheikh and Hassanzadeh, 2013).

Web-based financial reporting is implemented to simplify using financial statement information. These reports are in tagging format to facilitate the electronic communication of financial statement information between business systems and processing such information by computers. Web-based financial reporting tags identify exactly every part of financial statements for subsequent electronic processing; so, the advantages of this reporting approach, such as better access to information, lower cost, the possibility of continuous reporting, and providing dynamic information, expand the use of it in financial reporting.

Web-based financial reporting also helps to the understanding and usefulness of financial information by reducing errors, speeding up processing, and increasing comparative analysis (Borgi and Tawiah, 2022).

In this method, in addition to financial performance, companies pay considerable attention to the disclosure of other aspects of their performance, such as environmental, social, and regulatory procedures. Disclosing non-financial information can fill the gap between the financial information presented in the traditional model and the current information needs of users. Also, the voluntary nature of the information provided on the Internet by companies has caused non-uniformity in the information disclosure by companies. When companies use web-based financial reporting, their website contains a comprehensive set of financial statements, including notes to the financial statements and auditors' reports, and a link to their annual report is created everywhere on the Internet (Qadamyari and Amiri, 2019).

2.2 Financial Reporting Readability

Readability means the likelihood of the reader succeeding in understanding a text or writing. Recently, financial reporting readability has attracted the attention of capital market legislators in accounting and financial reporting to the extent that the US Securities and Exchange Commission showed that not all investors are able to quickly understand the complex reports of companies; so, companies should avoid publishing complicated, long, or redundant reports. According to the theory of information disclosure, the higher the quality of information disclosure, the lower the capital cost, incurred by companies (Gerkez and Haghdadi, 1400).

In this regard, Beyer et al. (2010) and Berger (2011) state that readability criteria provide a new way to evaluate the financial reporting quality of the companies. Also, Ajina et al. (2016) state that managers, knowingly or unknowingly, make biased interpretations of annual reports in order to hide their poor performance or to make their successes more obvious. In general, for distorting reality and hiding the poor performance of managers, there are two ways: The first is to distort verbal and numerical information or use metaphorical expressions. For this purpose, positive words or positive financial performance of the

company should be emphasized, or the performance of the company should be compared with those that show their current situation in the best possible conditions. The second is to distort financial reporting readability by using long and complex sentences in the report texts. Because, as the conducted research also admits, difficult and complex financial reports are not easy to understand for many shareholders (Dadashi and Norouzi, 2019).

2.3. Web-based financial reporting and financial reporting readability

Accounting standards are the rules that economic units are required to comply with and use for fair reporting. Compliance with accounting standards makes it possible to compare the financial statements of different business units. Evaluating the readability of accounting standards is important for various reasons (Sarvi et al., 2018). The first is that accounting standards are mandatory rules that reporting units must use to obtain an acceptable auditor's opinion. To properly apply a standard, users must be able to understand that it is related to the readability of financial statements. Web-based financial reporting offers benefits like reducing information asymmetry (Chong et al., 2017; Liu et al., 2017) and encouraging transparency and accessibility of business information. In addition, it increases the timeliness of financial reporting (Du and Wu, 2018) and the comprehensibility and comparability of financial reporting (Birt et al., 2017; Walton et al., 2021).

Annual financial reports of companies are always the most important information sources for decision-making by capital market actors (such as shareholders, creditors and financial analysts), capital market regulators and other stakeholders (Hasan, 2017).Therefore, financial reporting readability is considered as an important feature of textual information and has been widely investigated in various fields (Luo et al., 2018; Bonsal and Miller, 2017). Voluntary information disclosure is a way to reduce information asymmetry and agency conflicts and prevent managers from opportunistic behaviors. Therefore, timeliness and voluntary disclosure of information are two essential mechanisms for corporate transparency. Internet disclosure of financial information allows the information dissemination worldwide and facilitates access to the information for

users. Therefore, using web-based financial reporting has more advantages than traditional methods. Some believe that web-based financial reporting will change the generally accepted principles of accounting; while this is a false belief and it will only facilitate users' access to the companies' financial reports (Sassi et al., 2021; Peng et al., 2011). Based on the researchers' point of view, web-based financial reporting allows users to trust the presented reports. Based on the theoretical literature, financial reporting readability is more focused on the textual aspects of financial disclosure. For example, Kim et al. (2019) investigated the role of non-textual content such as graphics, HTML, and web-based financial reporting in the expansion of readable reports, believing that web-based financial reporting reduces the processing and collection of information. Chan et al. (2021) believe that web-based financial reporting components increase the ability of investors to better understand and use financial statement information so a positive relationship is expected between the size of these components and the financial reporting readability.

3. Literature

Cormier et al. (2022) studied the relation of the voluntary disclosure of extensible financial reporting language based on international financial reporting standards with the stock market in US companies. Their results showed that after a certain disclosure level of extendable financial reporting labels, its impact on stock pricing was negative. Also, expandable financial reporting had a positive and significant relationship with the stock market value of companies with positive profits.

Saraghi and Ali (2022) studied the impact of web-based financial reporting on tax avoidance of Indonesian companies during 2011 to 2018. Their findings indicate that the implementation of web-based financial reporting has no effect on tax avoidance. In their research titled "Information Processing Costs and Corporate Tax Avoidance: Evidence of the Role of Web-Based Financial Reporting", Chen et al. (2021) concluded that after the mandatory adoption of web-based financial reporting for financial reporting, companies will encounter reduced processing costs. Therefore, web-based financial reporting reduces the monitoring cost in terms of information processing; on the other hand, it also reduces managerial incentives to participate in tax avoidance behaviors. In a research,

Sassi et al. (2021) examined the mandatory approval of web-based financial reporting on the stock liquidity of companies using a sample of 980 companies from 13 countries since 2000 to 2016. Their results showed that the mandatory adoption of online financial reporting has a negative and significant effect on the liquidity of companies' shares based on Amihud's (2000) criteria. Therefore, the mandatory approval of this online financial reporting will increase the liquidity of stocks.

Daroghe Hazrati et al. (1400) analyzed the factors affecting the content items of web-based integrated reporting with a corporate citizen approach. For this purpose, a systematic evaluation and analysis of 282 cases of previous research findings was done with the qualitative research approach and metasynthesis tool including seven steps. At the end, the opinions of 12 experts and professors were collected through a questionnaire and using quantitative method of Shannon's entropy based on the content analysis approach, the determination coefficient of the identified factors was estimated. Finally, the factors with maximum impact on the web-based integrated reporting items were determined. Their results are of great help to the auditors working in the profession and financial managers of institutions to identify factors affecting the quality of content items of integrated web-based reporting. Karami et al. (2018) developed a model for the adoption and use of expandable business reporting language in Iran. They were obtained using a theoretical sampling by snowball method with 19 interviews to reach theoretical saturation. With open, central, and selective coding, a conceptual model was extracted including background conditions and strategies at 3 levels of companies/monitoring organizations, and software producers. At the company level, barriers to knowledge and recognition, complexity, infrastructure, cost-bearing, and resistance to change, education and awareness strategies, budget allocation, and motivational policies were identified**.**

At the level of software producers, the obstacles of complexity, cost, sanctions and infrastructure strategies, budget allocation, and etc. were identified. At the level of supervisory organizations, cultural issues, obligation and pressure, infrastructural issues, absence of a trustee and strategies for forming a specialized working group, an officer at the ministry level, acculturization, education and awareness raising,

and etc., were identified. Nazemi Ardakani et al. (2018) investigated the effect of web-based financial reporting on company value based on a sample of 112 companies in 2018. According to the results, the percentage of Internet financial reporting and the percentage of content items of Internet financial reporting had a positive and significant effect on the company value but Internet financial reporting had no effect on the company value   (2017). Zahmatkesh et al. (2018) investigated the effect of using an expandable business reporting language on information asymmetry using a sample consisting of 151 companies since 2009 to 2016. Their results indicated a significant negative relationship between the use of expandable business reporting language and information asymmetry. Therefore, it can be claimed that the expandable business reporting language leads to the reduced information asymmetry.

Reviewing domestic and foreign research showed that several indicators have been used in these studies for measuring web-based financial reporting. Accordingly, it is obvious that in each country, the intensity and weakness of these factors are different depending on the social and economic setting of that country. Therefore, whether we can have a comprehensive index of web-based financial reporting of Iranian companies is a controversial issue. This research aims to provide a comprehensive index for measuring web-based financial reporting by combining these factors according to Iran's conditions. Providing this index can help investors and others to have a better understanding of the company for investment, handling, planning, and etc. and to determine the extent of their reliance on the company's information.

Based on the proposed theoretical foundations, research hypotheses have were as follows:

H$_1$: Implementing web-based financial reporting model has an effect on the text length index of financial reporting readability.

H$_2$: Implementing web-based financial reporting model has an effect on the fog index of financial reporting readability.

4. Methodology

This research was developmental and applied in terms of the implementation and result; but, in terms of the data nature and analysis methods, it was mixed with

exploratory sequential design; among the existing approaches in the methodology, the interpretive approach was recognized as suitable for the study. The exploratory sequential design includes the collection and analysis of qualitative data in the first stage, followed by the collection and analysis of quantitative data in the second stage. It should be mentioned that the quantitative data of the second stage is determined based on the qualitative results of the first stage. In this research, using an exploratory sequential design for providing a suitable financial reporting model based on the business model concept, three general steps were taken: The first step was extracting dimensions and components (themes) effective on web-based financial reporting based on library studies and asking experts through semi-structured interviews and data analysis via the inductive analysis method (qualitative method).

After identifying the indicators, experts' opinions were used to weight and rank them. Sampling experts included choosing from the people whose experience or knowledge in the study field has been established. Therefore, the selection criteria of the experts in the present research are theoretical mastery, practical experience, willingness and ability to participate in research and availability. These criteria were measured through the following seven indicators.

(1) Completion of postgraduate studies, (2) Experiencing minimum participation in a financial project; (3) experiencing more than 5 years of teaching experience in finance and management; (4) Experiencing participation in designing accounting information systems; (5) Availability (because the questionnaire was filled face-to-face) (6) Willingness to participate in the research and (7) sufficient time to explain the research nature, geting familiar with some techniques, and completing the questionnaire, which is a time-consuming task.

To reach this list of experts, snowball sampling was used. Based on the introduction of experts, a total of 32 people were identified. After filtering and applying the aforementioned indicators, a list of 20 people was obtained.

The second step was designing and formulating the basic model of web-based financial reporting, determining reporting indicators, screening and checking their importance (quantitative method).

In the third or final step, the key and effective indicators that reached the consensus of the experts were introduced and the final proposed model was presented. Then, the implementation of the web-based financial reporting model affecting the financial reporting readability was discussed.

The statistical population included all public companies listed in the Tehran Stock Exchange. The time period of the research was since 2007 to 2019 and the statistical samples were selected among the companies with the following conditions:

1) They were accepted in Tehran Stock Exchange by the end of fiscal year of 2008.
2) In order to increase comparability, their fiscal year should end at the end of March and they shouldn't change their activity or fiscal year during the relevant periods.
3) They didn't belong to investment companies and financial intermediaries.
4) The companies' desired information were not available.

After applying the restrictions, 167 companies and 2004 (year-company) observations were selected as the research sample. Several criteria have been proposed to measure web-based financial reporting in the market.

4.1. Independent variable: A proposed model for measuring web-based financial reporting

According to the studies of Liu et al. (2017), Wang et al. (2014), and Ching Lai et al. (2015), a checklist containing sixty-two internet disclosure indicators included 8 main indicators and 62 content factors to measure web-based financial reporting: The organizational index with 14 factors, the financial index with 4 factors, the economic index with 3 factors, the social index with 6 factors, the political index with 7 factors, the human index with 7 factors, the technology index with 16 factors, and the cultural index with 5 factors. This checklist was designed by the researcher according to the existing literature review.

4.2. Dependent variable: Financial reporting readability

The independent variable was the financial reporting readability (READ), measured according to the research of Norouzi et al. (2020, 2021). The following

two indices were used to measure the readability of Persian texts by some domestic researchers, such as Fazlollahi and Maleki Tawana (2009).

The first index of financial reporting readability was FOG IND, a function of two variables of sentence length (in words) and complex words (defined as the number of words with three or more syllables), calculated as follows:

Formulation (1).

Fog index = 0.4 (mean of words in each sentence + percentage of complex words)

The process and method of determining the readability level of financial reporting in the above index is as follows:

1. Selecting a sample of one hundred words from the beginning, one sample of one hundred words from the middle and one sample of one hundred words from the end of the report randomly; 2. Counting the number of sentences of each sample; 3. Determining the average length of sentences by dividing the number of words into the number of complete sentences of each hundred-word sample; 4. Counting the number of three and more syllable words (complex words) in each one-hundred-word text; 5. Summing up the number of complex words with the average number of words in sentences; 6. Multiplying the sum of the number of difficult words and average words in sentences by a fixed number of 0.4; 7. Completing the calculations of clauses 4, 5, and 6 for two more samples of one hundred words; 8. Calculating the average results of all three samples by adding and dividing by the number.

The second readability index of financial reporting is the total text length index (LENGTH IND), calculated as follows:

(Number of text words) Ln = text length index.

4.3. Control variables

Variables such as company size, financial leverage, and growth opportunities were used as the control variables of this research.

Company size: One of the determining factors of cash from the viewpoint of free cash flow theory is company size. Large companies are less likely to face unwanted acquisitions for the amount of their required financing. Therefore, in this study, it was obtained based on the natural logarithm of the company sales (Norouzi et al., 2019).

Financial leverage- The existence of debt causes managers to have less free cash flow available to pay the principal and interest of the debt so that it is not possible to invest in the projects lacking added value. Thus, in this study, it was calculated from the ratio of total liabilities to total assets (Norouzi et al., 1400).

Growth opportunities-According to the research of Habib (2011) and Nobakht and Nobakht (2019), the company's growth opportunities are calculated from the ratio of the market value to the book value of the equity in each period. Studies show that free cash flow can be affected by the company's future growth opportunities so that the capital market values the free cash flow of companies with high growth opportunities.

5. Results
5.1. Identifying and screening model indicators with fuzzy Delphi technique based on the experts' opinion

In this research, based on the the literature review, examining theoretical foundations, and considering the environmental conditions of Iran, a comprehensive model was proposed to measure web-based financial reporting at the company level; then, the validity of this model was examined from the view point of academic and professional experts. The fuzzy Delphi technique was used for screening and final confirmation of the indicators; also, the views of some experts were utilized to measure the importance of the studied indicators using the fuzzy screening method. In this study, the Delphi technique with a five-point Likert scale was used. The fuzzy mean of the fuzzy averages of people's scores was calculated and the sum mean of the triangular and trapezoidal fuzzy numbers was summarized by a definite value which was the best related average. This was the de-fuzzing operation. The fuzzy average and de-fuzzified output values of 8 model indicators were greater than 0.7. Thus, the importance of all indicators was confirmed from based on the academic and professional experts. Therefore, a checklist containing sixty-two Internet disclosure indicators including 8 main indicators and 62 content factors were prepared: The organizational index with 14 factors, the financial index with 4 factors, the economic index with 3 factors, the social index with 6 factors, the political index with 7 factors, the human index with7 factors, the technology index with 16 factors, and the cultural index with 5 factors.

Table 1: The dimensions and components of the web-based financial reporting model

Factor	Tool	Fuzzy mean	X_{1max}	X_{2max}	X_{3max}	De-fuzzified values
Organizational	Transparency of financial information	(0.98,0.85,0.6)	0.811	0.820	0.830	0.830
	Improving financial structure and reporting	(0.95,0.79,0.54)	0.758	0.765	0.775	0.775
	Improving accounting and contracting contracts	(0.96,0.82,0.55)	0.768	0.768	0.785	0.785
	Data transfer rate	(0.95,0.77,0.52)	0.748	0.758	0.758	0.758
	Opportunities and information risk management	(0.95,0.74,0.50)	0.739	0.743	0.751	0.751
	Perspectives (organization, technology, public, user)	(0.96,0.80,0.55)	0.741	0.756	0.759	0.759
	Disclosure of transactions with related parties	(0.95,0.71,0.48)	0.755	0.763	0.779	0.779
	Board reports with direct links	(0.97,0.81,0.56)	0.783	0.794	0.781	0.781
	Developing procedures of internal control system	(0.85,0.64,0.38)	0.755	0.762	0.768	0.768
	Developing a monitoring program for raw material suppliers	(0.95,0.79,0.54)	0.479	0.818	0.797	0.797
	Management interpretation letter with direct link in website	(0.96,0.80,0.55)	0.802	0.834	0.774	0.774
	Forming a R&D committee	(0.84,0.79,0.61)	0.769	0.757	0.705	0.705
	Elaboration of corporate governance procedures	(0.93,0.82,0.54)	0.755	0.717	0.698	0.698
	Formulating code of ethics (expression of moral principles and values)	(0.75,0.84,0.93)	0.845	0.827	0.819	0.819
Financial	Increasing shareholder wealth through information disclosure	(0.82,0.74,0.63)	0.794	0.748	0.868	0.868
	Reducing internal financing costs through shareholders	(0.88,0.85,0.70)	0.752	0.714	0.814	0.814
	Audit reports with direct links	(0.95,0.79,0.54)	0.868	0.804	0.836	0.836
	Annual reports of companies with a sustainability/comparative approach with a direct link	(0.81,0.70,0.61)	0.874	0.796	0.752	0.752
Economic	Customer validation information	(0.77,0.81,0.69)	0.694	0.866	0.740	0.740
	Annual and periodical financial reports with the ability to change at a moment's notice with a direct link	(0.91,0.88,0.73)	0.857	0.809	0.746	0.746
	Reducing external financing costs	(0.84,0.72,0.63)	0.678	0.855	0.809	0.809
Social	Reducing the information costs of stakeholders	(0.68,0.79,0.82)	0.694	0.861	0.777	0.777
	Helping stakeholders by environmental information disclosure	(0.91,0.82,0.75)	0.738	0.807	0.741	0.741
	Increasing information efficiency	(0.84,0.76,0.68)	0.682	0.852	0.889	0.889
	Increasing information efficiency	(0.66,0.80,0.68)	0.743	0.694	0.859	0.859
	Reducing uncertainty and risk in investments	(0.91,0.89,0.74)	0.730	0.835	0.869	0.869
	Social investment information with direct link	(0.96,0.90,0.84)	0.714	0.915	0.963	0.963
Political	Reducing the costs of obtaining information by shareholders	(0.80,0.77,0.63)	0.721	0.813	0.681	0.681
	Reducing conflict of interests	(0.95,0.74,0.83)	0.798	0.815	0.691	0.691
	Human rights activities	(0.99,0.81,0.94)	0.731	0.698	0.762	0.762
	Gifts and services to charity	(0.98,0.89,0.68)	0.799	0.715	0.838	0.838
	Membership in social, cultural and religious	(0.89,0.76,0.73)	0.632	0.729	0.664	0.664

Factor	Tool	Fuzzy mean	X_{1max}	X_{2max}	X_{3max}	De-fuzzified values
	institutions					
	Freedom of expression through the establishment of a system for reporting violations, criticisms and suggestions	(0.87,0.74,0.95)	0.610	0.578	0.695	0.695
	Actions taken in line with economic development and self-sufficiency of the country	(0.78,0.88,0.83)	0.714	0.552	0.596	0.596
Human	Improving communication through intellectual capital	(0.80,0.81,0.76)	0.771	0.614	0.707	0.707
	Work and Employees/Employment and Work Procedures, recruitment information	(0.87,0.80,0.69)	0.541	0.533	0.566	0.566
	Creating equal opportunities or non-discrimination in the selection of employees	(0.95,0.68,0.78)	0.575	0.733	0.643	0.643
	Increasing the spirit of loyalty, motivation and employee communication	(0.78,0.68,0.82)	0.546	0.577	0.561	0.561
	Retirement and pensions of employees	(0.80,0.88,0.75)	0.599	0.561	0.968	0.968
	Providing assistance for natural disasters	(0.90,0.81,0.88)	0.526	0.608	0.708	0.708
	Supporting employees in social, cultural and other activities	(0.75,0.93,0.68)	0.515	0.714	0.685	0.685
Technological	Reducing the costs of preparing and distributing paper reports	(0.70,0.74,0.86)	0.694	0.542	0.741	0.741
	Portable document files	(0.96,0.92,0.85)	0.516	0.734	0.691	0.691
	Web programming language	(0.79,0.87,0.89)	0.601	0.531	0.843	0.843
	Spreadsheet files such as Excel sheets	(0.84,0.91,0.80)	0.588	0.596	0.682	0.682
	Extensible financial reporting language	(0.81,0.95,0.83)	0.599	0.697	0.711	0.711
	Hyperlink	(0.79,0.68,0.88)	0.672	0.743	0.667	0.667
	Qualitative characteristics related to the efficiency and effectiveness of information	(0.82,0.97,0.93)	0.566	0.733	0.526	0.526
	Qualitative characteristics of information related to information provision	(0.91,0.81,0.88)	0.717	0.739	0.548	0.548
	Qualitative characteristics associated with responsiveness	(0.91,0.84,0.68)	0.604	0.585	0.519	0.519
	Information system with filling capability	(0.91,0.85,0.88)	0.628	0.620	0.914	0.914
	The possibility of cloud processing	(0.84,0.75,0.78)	0.584	0.641	0.721	0.721
	Multiple reporting capability	(0.69,0.83,0.92)	0.667	0.523	0.704	0.704
	Technical features and deployment of the integrated system	(0.93,0.87,0.90)	0.688	0.771	0.736	0.736
	Usability and support	(0.98,0.82,0.97)	0.647	0.698	0.547	0.547
	Using web-based (smart) software	(0.91,0.94,0.81)	0.525	0.614	0.779	0.779
	Hyperlink feature	(0.70,0.89,0.86)	0.418	0.611	0.715	0.715
Cultural	Promoting the culture of environmental friendliness	(0.78,0.96,0.94)	0.441	0.512	0.631	0.631
	Educational activities, health and community health	(0.97,0.72,0.80)	0.914	0.886	0.471	0.471
	Cultural, educational and research activities and environmental planning	(0.86,0.74,0.69)	0.963	0.825	0.675	0.675
	The main actions taken in order to realize the national slogans	(0.85,0.74,0.71)	0.714	0.964	0.805	0.805
	Cooperation with organizations in order to develop environmental standards	(0.70,0.95,0.74)	0.633	0.512	0.914	0.914

5.2. The final model for measuring the web-based financial reporting index

According to the above explanations, the final model for measuring the web-based financial reporting index was as follows:

Model 1.

$$WFR - Index_{it} = 0.031\,P_1 + 0.046\,P_2 + 0.208\,P_3 \\ + 0.127\,P_4 + 0.012\,P_5 + 0.059\,P_6 \\ + 0.178\,P_7 + 0.425\,P_8$$

Where, P_i is the standardized factor for calculating web-based financial reporting indicators, P_1 is organizational index, P_2 is financial index, P3 is economic index, P_4 is social index, P_5 is political index, P_6 is human index, P_7 is technology index, and P_8 is cultural index.

After determining the conceptual model of the research and collecting data, the most important stage of modeling was validating the measurement model. The reliability of a model was checked using goodness of fit. Figure (1) shows the modified model for measuring the web-based financial reporting index.
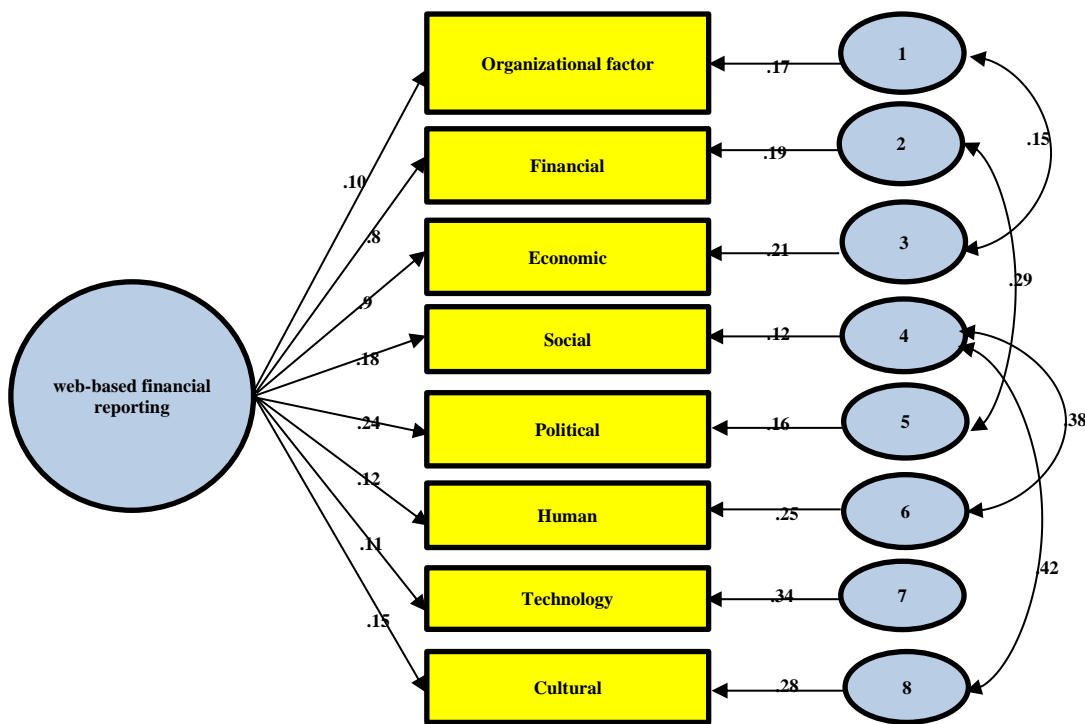

Figure 1. A revised measurement model of web-based financial reporting

5.3. Descriptive statistics of variables

Table (2) shows the descriptive statistics of the tested variables, which include some central and dispersion indicators.

The above table shows the descriptive statistics of the research variables, which includes some central and dispersion indicators. As seen in the table, the mean fog index of financial reporting readability is 18.512 and the mean readability index, text length of financial reporting, is 8.365. In addition, the mean financial leverage variable indicates that on average, about 64% of the assets of the investigated companies were financed through borrowing.

Table 2. Descriptive statistics related to the research variables

Variable	Mean	Median	Min	Max	sd
SIZE	5.9150	5.7134	4.3281	7.9735	0.6681
LEV	0.6433	0.6128	0.0384	1.0512	0.1608
LENGTH	-8.365	-8.291	-8.971	-8.114	1.642
Gunning Fog	-18.512	-18.482	-24.064	-16.150	2.022
GROWTH	0.189	0.173	-0.946	21.498	2.022

5.4. Testing the effect of the native model of online financial reporting on the financial reporting readability.

Since one of the major problems that may occur in the regression of time series is the phenomenon of spurious regression. Therefore, for solving this problem, Levin, Lin and Chui (LLC) and Im, Pesaran and Shin (IPS) tests were used for the researched variables. The results of this test indicated that the value of this statistic is significant for each of the variables so the null hypothesis implying that the variables have a unit root is rejected. In other words, the durability of the data is confirmed. Also, before estimating the model, it is necessary to determine the estimation method (either integrated or tabular). For this purpose, Chow's test was used. Considering that the probability of F limer of the research model is less than 5%, the panel method was used to estimate all models. On the other hand, the results of the Hausman test for the research model were less than 5%; so, the method of the fixed effects was used to estimate the model.

Table 3. Testing research hypotheses

Variable	$LENGTH_{i,t+1} = \beta_0 + \beta_1 WFR\_INDEX_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 GROWTH_{i,t} + \varepsilon_i$				$FOG_{i,t+1} = \beta_0 + \beta_1 WFR\_INDEX_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 GROWTH_{i,t} + \varepsilon_i$			
	The first model (text length index)				The second model (fog index)			
	Coefficients	sd	t value	Probability	Coefficients	sd	value t	Probability
Fixed coefficient	0.311	0.062	4.991	0.00610	0.076	0.020	3.647	0.000
Web-based financia reporting	1.615	0.454	3.555	0.0004	0.557	0.257	2.162	0.0311
Company size	0.879	0.026	3.311	0.0010	3.529	1.150	3.068	0.0000
Financial leverage	0.150	0.032	4.631	0.000	0.627	0.133	40695	0.0000
Growth opportunities	3.713	1.115	3.330	0.0010	0.902	0.142	6.352	0.0000
Determination coefficient	0.626				0.546			
Modified determination coefficient	0.561				0.489			
Durbin-Watson	1.548				1.578			
F statistics	9.708671				12.52981			
Probability (of F statistics)	0.00000				0.00000			
Dependent variable of the research: Readability indices of financial reporting (Fog and text length)								
Source: Researcher's findings								

According to the Table (3), it is clear that the F statistic and its significance level indicate the significance of the regression (the value of the F statistic is greater than the critical value and its significance is below the error level of 0.05). Also, Durbin-Watson's statistic indicated the lack of autocorrelation between the research variables. Based on the obtained results from the web-based financial reporting index, it increased the financial reporting readability, leading to the transparency of financial

reporting as well. Other control variables of the research also had a significant relationship with the financial reporting readability.

6. Conclusion

In this research, first, a model was provided for web-based financial reporting by reviewing the theoretical foundations and research literature and conducting interviews with financial experts using fuzzy Delphi method. The presented model consisted of eight indicators approved by the experts, including organizational, financial, economic, social, political, human, technological and cultural indicators. In the mentioned model, the organizational, financial, economic and human indices were divided at the level of the company, the political, social and cultural indices at the community level and the technology index at the level of software producers. So, using these indicators at the organizational level can lead to the improvement of the financial reporting for the users of the financial statements.

Also, after presenting the native model of web-based financial reporting, the effect of this model on the financial reporting readability was presented based on the research hypotheses. The obtained results indicate that the presented native model of the web-based financial reporting increases the fog index and the text length of financial reporting readability.

According to the obtained result, it can be argued that web-based financial reporting will increase financial reporting readability by reducing the information asymmetry and the additional information processing cost by users. This result is consistent with the research of Kahan et al. (2021) and Borgi and Tawiah (2022).

Regarding the conceptual statement of financial accounting, accounting information should be useful and reliable for the users of the corporate financial statements so that users can use it for their decision makings. Therefore, the reports provided by the companies should have high readability. For example, Lee (2008) argues that the readability of companies' annual reports reduces information processing by users. Based on the theoretical literature of accounting and finance, reports with high readability also reduce information asymmetry and the information processing cost, which decreases agency costs in companies (Bratten et al., 2015; Bao et al., 2018; and Ertugrul et al., 2017). The annual financial reports of companies are always considered one of the most important information sources of capital market participants for making decisions. However, the important

point is that information will be useful for decision-making if it is easily understood by users. Therefore, the capital market legislators, like the Securities and Exchange Commission, have always emphasized the importance of readability and comprehensibility of financial reports in protecting the interests of shareholders. Therefore, one of the factors that can benefit financial reporting readability of the companies is the disclosure of web-based financial reporting.

The rapid process of transformations in information and communication technology, especially the Internet, has affected all dimensions of human societies. Company websites are considered as a very important medium for corporate reporting. Most companies prefer to use websites to disseminate their information because the global Internet is very effective, dynamic, and flexible. In fact, many companies voluntarily publish their information on their corporate websites. This variation in the transparency of online financial information disclosure affects the decision-making process of investors. In response to the widespread use of the Internet and the increasing demands for information from shareholders, regulatory organizations are influencing the decision-making process of investors to improve the transparency level of online financial information disclosure.Therefore,web-based financial reporting provide shareholders with various information at once. Then, due to the importance of spreading this type of reporting for better competition at the global level and the significant role that it seems to have in increasing transparency of information and reducing information asymmetry and finally increasing the efficiency of the market, readability of the financial reporting can increase.

In this regard, the current research also suggests adopting appropriate strategies for the implementation of this new technology in line with global developments in financial reporting. Investors and shareholders should also invest on the companies that have a higher level of online financial reporting. Because, in this category of companies, you can make more informed decisions and reduce investment risk. Also, the readability of financial reports plays a significant role in reducing agency costs; so, it is suggested to the stock exchange organization to create a mechanism to monitor the readability level of companies in order to reduce information asymmetry in the market.

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