

New Trends in Social, Humanities and Administrative Sciences

Editor

Prof. Sinan Sönmez, Ph.D.

DUVAR

New Trends in Social, Humanities and Administrative Sciences

Editor

Prof. Sinan Sönmez, Ph.D.



New Trends in Social, Humanities and Administrative Sciences
Editor: Prof. Sinan Sönmez, Ph.D.

Editor in chief: Berkan Balpetek
Cover and Page Design: Duvar Design
Printing : First Edition-December 2022
Publisher Certificate No: 49837
ISBN: 978-625-8261-67-7

© **Duvar Publishing**
853 Sokak No:13 P.10 Kemeraltı-Konak/Izmir/ Turkey
Phone: 0 232 484 88 68
www.duvaryayinlari.com
duvarkitabevi@gmail.com

Printing and Binding: REPRO BİR
Repro Bir Mat Kağ. Rek. Tas. Tic. Ltd. Şti.
İvogsan 1518. Sokak 2/30 Mat-Sit iş Merkezi Ostim
Yenimahalle/Ankara
Certificate No: 47381

TABLE OF CONTENTS

Chapter 1 • 9
Sexual Harassment: An Invisible Crime in Pakistani Society
Abdul HADİ

Chapter • 25
The Us Foreign Policy Towards the Middle East in the Trump Period and the "Deal of the Century"
Abdurrahman GÜMÜŞ

Chapter 3 • 41
Testing Purchasing Power Parity Hypothesis for Türkiye with Wavelet Unit Root Test Perspective
Ahmet KONCAK, Selahattin GÜRİŞ

Chapter 4 • 57
Political Ideology and Preference for Organic Products
Ali Umut GÜLER

Chapter 5 • 69
Reverse Innovation:
An Evolution From Immovation to Innovation in Developing Countries
Mahmut Sami DURAN, Ayşe Özge ARTEKİN

Chapter 6 • 89
An Evaluation of the Spatial Dynamics of Regional Poverty in Turkey
Selen IŞIK MADEN, Ayşegül BAYKUL

Chapter 7 • 105
Ecological Footprint and Its Importance in Terms of Sustainability
Ayşenur ERDİL, Hikmet ERBIYIK

Chapter 8 • 131
The Importance of "The Turkish Trade Registry Gazette" in Terms of Business and Accounting History Research
Cengiz GÜNEY

Chapter 9 • 149
Right to Environment as an Environmental Protective Value
Demet CANSARAN

Chapter 10 • 161
Universities as Learning Organizations after the Covid-19 Pandemic
Deniz KOYUNCUOĞLU

Chapter 11 • 181

The Relationship of Air Transport with Foreign Trade Volume and GDP in Turkey: A Time Series Analysis
Deniz MACİT, Armagan MACİT

Chapter 12 • 199
Identity Change and Identity Verification of Characters in Maurice by E. M. Forsters
Dilek TÜFEKÇİ CAN, Mehmet Fikret ARARGÜÇ

Chapter 13 • 225
Innovation Strategies
Ergun SELCUK

Chapter 14 • 237
Fragmented Families in Djibouti: A Study on Single Parenting
Göknur EGE, Mourad Meraneh YOUSSOUF, Djiro DARNADJİ

Chapter 15 • 251
Turkish Foreign Policy and Indigenous Defense Industry Efforts
Halide Nur CAFOĞLU YAŞAR

Chapter 16 • 277
Integration of Artificial Intelligence Systems into Real and Virtual Marketplaces
Kemal Gökhan NALBANT, Sevgi AYDIN

Chapter 17 • 289
Transformation of Training of the Central Bureaucrats in the Ottoman Modernization Period
Muhammed Murat ÖLMEZ

Chapter 18 • 305
Woman in Cormac Mccarthy's Border Trilogy
Muharrem ÜNEY, Aydın GÖRMEZ

Chapter 19 • 333
Technology Readiness Levels from Basic Research to Product
Nevzat ÜNALAN

Chapter 20 • 347
The Effectiveness of Central Bank Interventions in Turkey: An Event Study Approach
Ömer DEMİR

Chapter 21 • 361
The Effects of Military Expenditures on Economic Growth Bounds Test Approach for the Case of Ukraine
Özgür ÖZAYDIN, Anıl DAĞDEMİR

Chapter 22 • 373
Absorptive Capacity, Learning and Emotional Capability in the Context of Organizational Culture
Öznur GÜLEN ERTOSUN

Chapter 23 • 393
International Student Mobility in Tertiary Education: Causes and Consequences
Pınar ÖZDEMİR

Chapter 24 • 411
Psychological Enigma of Magical Realism in Toni Morrison's Novels
Pınar SÜT GÜNGÖR

Chapter 25 • 425
Determination of Road Users Behavior by Boruta Algorithm
Sanem ŞEHRİBANOĞLU

Chapter 26 • 457
Turkish Series on the Digital Platform and Implications for Audiovisual Translation Research
Seda KUŞCU ÖZBUDAK

Chapter 27 • 471
Organizational Communication
Semra TETİK

Chapter 28 • 489
Transformation of the Information and Content Production Process in the Digital Age: Exaggerated Images and the New Ordinary Experts
Serdar ÜNAL

Chapter 29 • 509
Public Relations and Advertising Campaigns for Environmental Awareness in Digital Marketing: Examples of Environmentalist/Green Advertising
Sinem EYİCE BAŞEV

Chapter 30 • 531
Long-Term Variations of Total Annual Precipitation and Drought in Adana Sub-Region, Southern Turkey
Türkan BAYER ALTIN

Chapter 31 • 553
Critical Roles Of Social Work During a Pandemic: Lessons from the Front Lines
Yaser SNOUBAR

Chapter 32 • 565
Bibliometric Analysis of Studies on
Extensible Business Reporting Language (XBRL)
Cengiz GÜNEY, Ahmet İÇÖZ

Chapter 33 • 589
Trumpism: The Populist Surfing on Conservative Wave
Muhammet Murat ÖYMEZ

Chapter 34 • 597
Income and Trade as Determinants of the Military Expenditures:
Bounds Test Approach for the Case of Indonesia
Mariama NYANG, Özgür ÖZAYDIN

Chapter 35 • 611
Organizational Commitment
Semra TETİK

Chapter 36 • 635
Optimum Product Detection in the Marketing Industry by
SPSS Applied Turf Analysis Method
Aynur İNCEKIRIK, Özgür SARACIK, Öznur İŞÇİ GÜNERİ

Chapter 32

Bibliometric Analysis of Studies on Extensible Business Reporting Language (XBRL)

Cengiz GÜNEY [1]
Ahmet İÇÖZ [2]

1 Assoc.Prof., Kocaeli Üniversitesi, Gazanfer Bilge Vocational High School, Accounting and Taxation Department., cengiz.guney@kocaeli.edu.tr ORCID: https://orcid.org/0000-0001-5703-6176.

2 Assoc.Prof., Kocaeli Üniversitesi, Gazanfer Bilge Vocational High School, Accounting and Taxation Department., cengiz.guney@kocaeli.edu.tr ORCID: https://orcid.org/0000-0001-5703-6176.

1. Introduction

Extensible Business Reporting Language (XBRL) is the open international standard for digital business reporting. XBRL provides a common language to report terms that can be authoritatively defined. Those terms can then be used to uniquely represent the contents of financial statements and business reports. By this way reporting information can move between organizations very fast, properly and digitally (XBRL International, 2022).

It is vital to present the financial reports of the enterprises in a timely, fast, effective and reliable manner. With the developments in technology, the way financial reports are presented has also changed. Financial statement transfer has started to be widely used in electronic environment and over the internet. With globalization, businesses have gained an international dimension and the interest groups of financial reports have also changed. Businesses had to submit their reports to different people and organizations and in different languages. Financial reports prepared by businesses can be in different formats depending on the systems of those who request these reports. In this case, those who request the financial report must rearrange these reports in order to be able to analyze them. Because these financial reports are not in the same format with their own financial reports, they cannot make comparisons. At the same time, it does not allow for easy data extraction and analysis. This causes significant waste of time and high costs.

In order to put the financial reports which are in different formats to in a single format, the standards called International Financial Reporting Standards (IFRS) have been created in the world. Businesses prepare their financial reports by using international accounting reporting standards. However, many accounting software are used in the world. This software use many different types of databases, run on many different operating systems, and even have been prepared in many different programming languages. Even if it is based on the same standard, new arrangements must be made before reporting so that the reports produced by two different accounting software can be compared with each other.

All this causes the time increased until these accounting data are processed and reported in the desired standards. As a result, it causes the audits related to the reporting to be carried out later, and the decision makers about this business to make a tardy decision. Today time is very important for all businesses. So all businesses want to decrease the time. And to solve this problem extensible business reporting language was born. It allows the communication of accounting data prepared in these different data formats in a single common language

on the internet, so that reporting can be made in a short time according to different standards and needs.

The aim of this study is to examine the scientific publications including XBRL during the period of 2002-2022 (February). The analysis based on the bibliometric evaluation of all publications indexed in the Web of Science (WoS) database including XBRL phrase in the title, abstract or key words. With this aim, we tried to answer these questions: How are publications in relevant to XBRL can be classified according to document type? How is the distribution of the studies related to XBRL by years? Which are the most productive journals, countries and institutions related to XBRL literature? Who are the highly productive authors in relevant to XBRL in WoS? What are the most highly cited publications in relevant to XBRL?

Results indicated that; the vast majority of XBRL studies are published as an "article" (57.01 %) and "proceedings paper" (32.82 %). Respectively, USA (45.11 %), England (17.47 %) and Netherlands (9.02 %) are the top three leading countries that contribute to the XBRL literature. Journal Of Information Systems is a prominent domain of XBRL research (8.25 %). Findings also demonstrated that Troshani, Indrit is the most productive scholar in the field of XBRL whereas Hodge, FD; Kennedy, JJ; Maines, LA with the "Does search-facilitating technology improve the transparency of financial reporting?" is the most cited (f=239) article in the WoS. Finally, the significant increase in the number of publications in the field of XBRL since 2008 results in the fact that the subject has gained momentum among academics in recent years.

2. Literature Review and Theoretical Framework

In this part, related literature is examined and theoretical framework of XBRL is given.

Fedorowicz (2003) discussed XBRL's development process, the underlying Extensible Markup Language (XML) framework andexamples of its use on the Web. It introduces XBRL's educational impacts, and discusses its incorporation into an Advanced Accounting Information Systems course. Recommendations forincorporating XBRLacross the accounting curriculum based on an informal Internet survey conclude the article.

Karasioğlu and Eryiğit (2005) discussed the features of XBRL and the benefits it will provide to interest groups and compared the current internet-based financial reporting and the use of XBRL.

Uyar and Çelik (2006) complement to explain the web-based formatting and reporting languages that can be used in the presentation of financial statements on the internet.

According to Bai, Sakau, and Takeda (2014), the regression results provide evidence consistent with the idea that the adoption of XBRL has improved the information environment in the Japanese market. This can be observed from the highly significant and negative relationships between the adoption of XBRL and the volatility of event returns, absolute cumulative abnormal returns, changes in the standard deviation of returns, and abnormal bid-ask spread after controlling for firm-specific features. Their findings show that XBRL disclosures have the potential to reduce information asymmetry through improved accessibility and transparency. These findings are robust for a sentiment analysis that excludes financial firms.

Karapınar and Yılmaz (2012) mentioned analysing the technical structure of XBRL, comparing it with traditional financial reporting systems and examining the contribution of it to traditional reporting system solution.

Sun (2017) investigated the interaction mechanism of the information disclosing tools and the value effectiveness which brought by XBRL and found out that the application of XBRL on the accounting information flow processing will enhance the XBRL technology and improve the usefulness of value chain accounting information.

Hoitash and Hoitash (2018) investigated a new measure of accounting reporting complexity (ARC) based on the number of accounting elements (XBRL tags) disclosed in 10-K filings. Preparing and disclosing more accounting items is complicated because it requires greater knowledge of the relevant accounting standards. This aspect of complexity can increase the likelihood of error and misapplication of GAAP, ultimately leading to less credible financial reports. And found that ARC is associated with greater likelihood of misstatement and disclosure of material weaknesses, longer audit delays, and higher audit fees. Compared to commonly used measures of operational and linguistic complexity, the associations between ARC and these outcomes are more consistent, have greater explanatory power, and have greater economic significance. And ARC captures accounting complexity broadly, while allowing it to be disaggregated into account-specific complexity measures.

Francesca, Andrea and Michela (2019) extended the knowledge of XBRL to synthesize what twenty years of accounting and business literature on XBRL suggests about the effective improvement from its implementation in financial reporting.

Faboyede, Obiamaka, Akande, Oladipo (2020) discussed the concept and need for XBRL, as well as its potential uses and challenges, and identified an ongoing transformation in the way business is conducted and regulated worldwide. The onslaught of the information revolution has profound consequences

for corporate reporting information preparers and users. Therefore, they recommend that the higher the degree of cooperation between all participants in the financial information supply chain, including government regulators and public sector accountants, the greater the benefits this information format provides for all participants, educators, academics, companies, regulators, investors. it does. as well as government agencies.

İşbil, Köroğlu, and Zaif (2021) discussed the necessity of integrating XBRL into the accounting curriculum in Turkey and made some practical suggestions on how XBRL could be integrated into the accounting curriculum. In this context, the sample includes the accounting departments of universities that offer 4-year undergraduate degrees in the 2019-2020 academic year in Turkey. Therefore, the data set of the research consists of the accounting curriculum of 13 universities (state universities: 8 and foundation universities: 5). The curricula and course contents of the relevant universities and departments were accessed and analyzed on their websites. The findings reveal that the courses in the curriculum do not contain information about XBRL. Therefore, the study proposes how to integrate XBRL in core subjects into the current curriculum.

Shkulipa (2021) analyzed accounting publications of the largest publisher by accounting journals, to evaluate the coverage of accounting directions, and indicate the current popularity of IFRS, XBRL, and blockchain technology. And concluded that the most frequent accounting topics published in 2018 and 2019 are management accounting (12%), audit and control (11%), capital (11%), and financial statements (8,4%); and the least frequent are IFRS including XBRL (5%) and blockchain technology (2%).

Ping (2021) discussed new strategies of contemporary management accounting development such as artificial intelligence, management accounting, data mining, XBRL technology. According to this study, data mining can provide some technical support for the implementation of strategic management accounting. Because the most important thing in management accounting informatics is to provide the management of large companies to process, calculate and transmit the business information of the enterprise through the corresponding computing platform using computer technology, and provide the relevant data to the management of large companies. To better analyze and make decisions and perfect the future development strategy of the enterprise, so it is more important to scan the relevant technology in the management accounting information process.

2.1. What is XBRL?

XBRL is the open international standard for digital business reporting. It is a nonprofit consortium and managed by a global XBRL International. XBRL is used around the world, in more than 50 countries because it is more useful, more effective and more proper digital versions than paper-based reports. XBRL provides a common language to report terms that can be authoritatively defined. Those terms can then be used to uniquely represent the contents of financial statements and business reports. By this way reporting information can move between organizations very fast, properly and digitally (XBRL International, 2022).

XBRL first started in 1998 with the discovery of how to use XML in the financial reporting process of an accounting firm in the USA. After the specification of XML by the World Wide Web Consortium, the financial reporting version of XML was developed. Also in 1998, the American Institute of Certified Public Accountants (AICPA) made a regulation regarding the use of XML in the financial reporting process. In 1999, they tested the financial statements of 10 companies through XBRL with a computer company. In 2000, technology companies, especially Microsoft, started XBRL applications. In 2001, the International Accounting Standards Board (IASB) and the U.S.A. Securities and Exchange Commission-SEC offered recommendations on this issue. In 2002, The Australian Prudential Regulatory Agency launched the XBRL application (Uyar & Çelik, 2006, s. 98).

When we look at the articles and books prepared on this subject, we see different definitions expressed with other words. XBRL is an electronic language developed for standardizing the preparation, reporting, publishing, auditing and sharing of financial information (Uday & Groomerb, 2004).

XBRL is undergoing a rapid transition from the vision phase to becoming a practical global standard for financial and business reporting. XBRL is intended to allow the efficient compilation, distribution, and usage of financial statements. It is an open standard that provides a way to model business information and to articulate its semantic meaning. Internationally, the XBRL data standard is a platform for addressing the problem of data integrity, timeliness and reusability (Bai, Sakaue, & Takeda, 2014, s. 50).

XBRL is a global standard for electronic communication of business and financial data. It has been a widely accepted standard and implemented worldwide, including the US, China, Australia, India, Japan, South Africa, Germany, and Latin American countries. As a global and not-for-profit consortium, XBRL International (XII) manages the worldwide collaborative effort to create this standardized digital format for exchanging accounting, tax, and other business

reporting information. XBRL has the potential to reduce barriers to interoperability among different information systems for information exchanges. Thus, although the organizations have different business systems, they may still achieve financial information sharing via XBRL (Rahwani, 2019, s. 134)

2.2. What does XBRL do?

It can be called for XBRL "bar codes for reporting" makes reporting more proper and efficient. By using XBRL people know that the published reports contain information all in and can be consumed and analyzed accurately. And it enables to test reports against a set of business and logical rules, in order to capture and avoid mistakes at their source. And it also makes easy for people to understand reports if it is written different languages, alternative currencies or in their preferred style. Information in reports prepared using the XBRL standard is interchangeable between different information systems in entirely different organizations. This allows for the exchange of business information across a reporting chain. People that want to report information, share information, publish performance information and allow straight through information processing all rely on XBRL (XBRL International, 2022).

It provides the presentation of financial information, the preparation of financial statements and the simultaneous and easy access to all information about the business.Because each item is formatted individually, preparers of financial statements can easily replace items in financial statements to meet the needs of different people.It can automatically convert a financial statement into different versions requested with XBRL.For example, those browsing the Web in an XBRL environment will automatically be able to see the analysis of daily sales or receivables with growth in revenue. With another example, depreciation expenses of all companies operating in the same sector in a given year can be compared in detail (Uyar & Çelik, 2006, s. 98).

XBRL is not a new accounting standard and can be applied flexibly to existing accounting standards and new changes in standards. XBRL was developed for the electronic transfer of trade reports and trade-related data. Balance sheet, income statement, cash flow statement etc. is to establish an XML-based standard for the creation, transfer and analysis of reports. In short, XBRL presents the financial reports created with the information provided to the users over the internet by using all the capabilities of the XML program (Karasioğlu & Eryiğit, 2005, s. 135).

2.3. The Features of XBRL

The standard has been developed over more than ten years and supports almost every kind of conceivable reporting. XBRL is used in many different ways, for many different purposes, including by regulators, companies, governments, data providers, analysts and investors, accountants. And it allows the test business rules. It doesn't matter if the business rules are logical or mathematical. Anyone can restrict or allow the creation of business rules when reporting. It allows concept definitions to be prepared in as many languages as necessary. Translations of definitions can also be added by third parties. This means that it's possible to display a range of reports in a different language to the one that they were prepared in, without any additional work. The XBRL community makes extensive use of this capability as it can automatically open up reports to different communities. It is supported by a very wide range of software from vendors large and small, allowing a very wide range of stakeholders to work with the standard (XBRL International, 2022).

The use of XBRL prevents multiple entries of financial information, reduces the risk of incorrect data entry, and eliminates the need for manual information switching for different formats. In this way, the costs of preparing and distributing financial information to be delivered to investors and analysts are reduced. Since it is an XML-based language, financial report producers can label the data they need or add to the classification system they use to increase the application width. It is a standalone program. It can be used on any computer with any operating system. XBRL allows to automate reporting processes, can be adapted to new reporting systems and standards, and provides flexibility in reporting formats. Since it is easier to report according to different accounting standards with XBRL, different accounting standards can be brought closer to each other (Karasioğlu & Eryiğit, 2005, s. 139).

XBRL allows the creation of reusable, authoritative definitions which is called taxonomies. And the taxonomies capture the meaning that contains of the reporting terms used in a business report and the relationships between all the terms. Taxonomies are developed by regulators, accounting standards setters, government agencies and other groups that need to clearly define information that needs to be reported upon. XBRL doesn't limit what kind of information is defined: it's a language that can be used and extended as needed.

XBRL provides labeling of data based on current accounting standards. But XBRL is not an accounting standard or an application that changes these standards. XBRL facilitates the preparation, reuse, preparation and analysis of financial data. But it does not change what is reported, nor does it make any changes to existing information. XBRL provides access to information from anywhere

by removing time and place limitations. XBRL is not only an American-based study, but also a study with international effects and foundations. XBRL provides automation to prevent errors that may occur with more than one data entry. But it does not have a structure that can solve all accounting problems. XBRL is flexible enough to be applied to individual preferences. XBRL is not a proprietary technology. It is a public programming language that can be used without a license (Yardımcıoğlu & Özer, 2011, s. 84).

In today's world, where the need for changing and developing information is increasing, it is not flexible, economical, and accurate to process information manually. Many organizations now realize that spending more money and human effort on collecting and processing data does not add to the performance and value of the organization, or even reduces its value. Because the manual data transfer process causes an error. If a common computer language that all software can understand is used and there is no need for manual data entry, the risk of errors and costs are also eliminated (Yılmaz, 2012, s. 66).

2.4. Technical Structure of XBRL

While XBRL was first called Extensible Financial Reporting Language (XFRML), it was later agreed to become a broad language and It's called the XBRL. Thus, it has been ensured that it is a language that allows reporting not only financial information but also non-financial data. One of the most important goals of XBRL is to ensure that financial report writers and financial report users use a common language. For this purpose, taxonomies, which have a common meaning for everyone and have dictionary characteristics, have been developed. The taxonomies are based on specifications developed by the W3 (WWW) consortium. Financial reports prepared in accordance with taxonomies are also called instance documents. Therefore, the technical structure of XBRL consists of specifications, taxonomies and sample documents (Karabınar & Yılmaz, 2012, s. 7).

2.4.1. Specifications

The specifications define the operating system of XBRL and the rules to which documents created in accordance with XBRL will be governed. The specifications for accounting records are called the general ledger specification (XBRL General Ledger-XBRL GL-), and the specifications for the creation, publication and comparison of financial reports are called financial reporting specifications (XBRL Financial Reporting -XBRL FR-) (Karabınar & Yılmaz, 2012, s. 7).

Technically, a specification is a document that describes how financial terms are defined in the XBRL language. XBRL specifications; It makes the creation, comparison and transfer of business reporting information standardized and easier. XBRL, like XML, uses tags to mark up documents. Labels; The structure of the document is used to provide instructions for electronic transfer and presentation formats. Without tags, the document will have no structure, the program will not understand the data or know what to do. If a company does not have specifications that work in harmony with each other, the data to be used for the creation of financial reports should be prepared again and again (Karasioğlu & Eryiğit, 2005, s. 136).

2.4.2. Taxonomies

The term taxonomy means the classification of living things and the rules and principles used in this classification, derived from the Greek words "Taxis (regulation)" and "nomos (law)". Taxonomies define concepts. Taxonomy is rather a dictionary that expresses concepts in a certain format and defines the metadata to be reported. An XBRL taxonomy is a system for describing and classifying the content of financial statements and other business reporting documents. Taxonomies explain the meaning of each concept that will be included in business reports, what their characteristics and qualities are. Thus, the equivalent of each concept to be included in the sample documents will be included in the taxonomies (Karabınar & Yılmaz, 2012, s. 7).

Taxonomies consist of Financial Reporting Taxonomies (FR) and Ledger Taxonomies (GL). They describe how each business reporting information will be described in a standardized format. The XBRL classification system defines and classifies the content of accounting reports in a standardized manner. The XBRL classification system is an XML schema that defines new elements that can be referenced in an XBRL document. The meaning of financial information is described in the classification system, and the values entered in the XBRL document are indicated by labels. These tags make it possible to use the data in any form with the application from any computer. Financial data stored in the form of an XBRL document can be read and transferred to a workable computer, platform and application. The purpose of the classification system is to provide a system for commercial and industrial companies to create coherent documents covering financial reporting purposes (Karasioğlu & Eryiğit, 2005, s. 137).

3. Financial Statements in XBRL

Rapid developments in information technology, especially the internet and related technologies, also affect traditional financial reporting. As a result of the increase in the use of the Internet, most businesses present their financial information and financial reports, as well as their marketing and sales information, via the Internet. The presentation of financial reports on web pages has increased considerably towards the end of the 1990s. These reports can be summary reports prepared in different formats (such as acrobat reader and html), or they can be reports with a detailed financial analysis (Yardımcıoğlu & Özer, 2011, s. 80).

The users of financial statements are listed as investors, creditors, employees, government, unions and thus the whole society. Businesses convey the financial statements to users in various ways that they have created because of their activities. Today, financial statements are presented as written text and electronically in HTML, Excel, Word, pdf etc. formats. Users upload these financial statements to their own systems and use them for various purposes. However, the fact that the data on the computer is in different formats makes data transfer difficult and causes users to reload the data. This situation can lead to loss of time to a great extent, as well as cause errors caused by the human element. As a result, the accuracy, reliability and transparency of the financial statements are compromised. This situation reveals the necessity of a standard computer language in the transfer of data. In order to compare financial information prepared in different formats, this information needs to be rewritten or copied. This situation both increases the possibility of making mistakes and causes increased costs and loss of time. However, since XBRL data is prepared to be converted into files in different formats. There is no need to re-enter these data. This enables financial information users to easily access financial information of businesses and compare them with other companies. XBRL is a business language that allows access in the shortest time and at the least cost, besides being accurate and reliable (Karabınar & Yılmaz, 2012, s. 14).

When an enterprise that wants to use a loan presents its financial statements to the credit institution in pdf format, the credit institution will reload the data into its own system for analysis of these tables and only then can it be subjected to analysis. In addition, the credit institution will spend most of the time in the process of meeting the loan demand by collecting data and uploading the data to its system and will spare less time for analysis and evaluation. The same problems are valid for other financial statement users such as tax administration, Central Bank and investors. This situation reveals the necessity of a standard computer language in the transfer of data (Yılmaz, 2012, s. 66).

Financial data is obtained from many sources and used for more than one purpose. Inside and outside the company; Since data is collected from different areas and used in different areas, it requires continuous data exchange between different systems. In order to obtain the data, research, selection, arrangement and reformatting processes are carried out. These processes are manual, time consuming and difficult. Since the communication between different sources is standardized with the use of XBRL, it becomes easier to use the data for different purposes, and companies can make different reports with a single data entry. Financial data users, on the other hand, reach the data they want without examining all the documents or changing the format of the documents. As a result, efficiency increases in data acquisition processes (Karasioğlu & Eryiğit, 2005, s. 147).

XBRL has been developed to meet the need for a standard computer language that will be valid all over the world in the presentation of financial reports over the Internet, which can be perceived and interpreted by computers, thus allowing automatic data exchange between individuals and institutions without the need for data entry (Karabınar & Yılmaz, 2012, s. 6).

4. Method

4.1. Sample and Data Collection

This study used the Web of Science (WoS) database to reach highly qualitative publications in the field of XBRL. During the period of 2002-2022 (February), the publications including "Extensible Business Reporting Language (XBRL)" term in titles, abstracts and keywords of published works indexed in Science Citation Index Expanded (SCI-EXPANDED), Social Sciences Citation Index (SSCI), Arts & Humanities Citation Index (A&HCI), Conference Proceedings Citation Index-Science (CPCI-S), Conference Proceedings Citation Index-Social Science & Humanities (CPCI-SSH), Emerging Sources Citation Index (ESCI) was downloaded in appropriate with the bibliometric data. Totaly, 531 publications were concluded. After elimination of duplicates (10) and other data cleaning procedures, 521 publications were analysed.

4.2. Analyses

By the help of bibliometric analysis, researchers examine statistically the country, author(s), and cooperation among authors, citations, institutions, and published years of selected publications and set forth the general structure of a certain discipline using obtained statistical findings (Özbağ, Esen, & Esen, 2019).

Accordingly, the present study addresses the following key research questions:

• How are publications in relevant to XBRL can be classified according to document type?

• How is the distribution of the studies related to XBRL by years?

• Which are the most productive journals, countries and institutions related to XBRL literature?

• Who are the highly productive authors in relevant to XBRL in Web of Science (WoS)?

• What are the most highly cited publications in relevant to XBRL?

5. Findings

5.1. Document Types of XBRLStudies

521 publications were classified according to document types using the publication categorization of the Web of Science platform (Table 1). Accordingly, 57.01% of the publications are published as "articles" and 32.82% as " Proceedings Paper". In other words, the vast majority of XBRL studies (89.83%) are published in the field as "articles" and "proceedings".

Table 1. Document Types of XBRLStudies

Rank	Document Type	f	%
1	Article	297	57,01
2	Proceedings Paper	171	32,82
3	Book Chapter	15	2,88
5	Editorial Material	12	2,30
6	Review	11	2,11
7	Others	15	2,88
Total		**521**	**100**

5.2. Annual Production of XBRLStudies (2002-2022 February)

Table 2 shows the annual production of XBRL studies over the period of 2002-2022 (February). Since 2008, a significant increase in the number of publications in the field of XBRL draws attention. The publication of 479 out of 521 publications after 2008 results in the conclusion that XBRL research has gained momentum among academics in recent years.

Table 2. Annual Production of XBRL Studies (2002-2022 February)

Rank	Publication Year	f	%	Rank	Publication Year	f	%
1	Early Articles	7	1,34	12	2012	30	5,76
2	2002	4	0,77	13	2013	37	7,10
3	2003	1	0,19	14	2014	37	7,10
4	2004	3	0,58	15	2015	43	8,25
5	2005	6	1,15	16	2016	33	6,33
6	2006	9	1,73	17	2017	42	8,06
7	2007	12	2,30	18	2018	43	8,25
8	2008	26	4,99	19	2019	36	6,91
9	2009	28	5,37	20	2020	26	4,99
10	2010	34	6,53	21	2021	32	6,14
11	2011	32	6,14				
Total						**521**	**100**

5.3. Sources of XBRLStudies

According to Table 3, 521 publications in the data set for XBRL literature are available from 329 different sources. While "Journal Of Information Systems" has the most XBRL articles with 43 articles, it is in the second place with "Journal Of Emerging Technologies In Accounting" and 18 publications. "International Journal of Accounting Information Systems" is in the third place with 16 publications.

Table 3. Sources of XBRL Studies

Rank	Source Name (Title)	f	%
1	Journal Of Information Systems	43	8,25
2	Journal Of Emerging Technologies In Accounting	18	3,45
3	International Journal Of Accounting Information Systems	16	3,07
4	International Journal Of Accounting And Information Management	12	2,30
5	International Journal Of Disclosure And Governance	12	2,30
6	Accounting Horizons	7	1,34
7	Issues In Accounting Education	7	1,34
8	Journal Of Accounting And Public Policy	6	1,15
9	Decision Support Systems	5	0,96
10	Accounting And Finance	4	0,77
11	Accounting Perspectives	4	0,77
12	Accounting Review	4	0,77

13	Journal Of Busıness Research	4	0,77
14	Mobıle Applıcatıons And Knowledge Advancements In E-Busıness	4	0,77
15	Accountıng Research Journal	3	0,58
16	Cluster Computıng-The Journal Of Networks Software Tools And Applıcatıons	3	0,58
17	Informatıon Systems	3	0,58
18	Internatıonal Journal Of E-Busıness Research	3	0,58
19	Internatıonal Journal Of Managerıal And Fınancıal Accountıng	3	0,58
20	Internatıonal Journal Of Managerıal Fınance	3	0,58
…	…	…	…
329	Wseas: Advances On Applıed Computer And Applıed Computatıonal Scıence	1	0,19
Total		**521**	**100**

5.4. The Most Productive Scholars in XBRLStudies

Table 4 lists the most prolific 3 scientists in the XBRL field. Accordingly, Troshani, Indrit has a high number of publications (f=12), Liu, Chunhui is the second (f=10) and Bonson, Enrique (f=6) is the third prolific author in the dataset.

Table 4. The Most Productive Scholars in XBRL Studies

Rank	Author Name	f
1	Troshani, Indrit	12
2	Liu, Chunhui	10
3	Bonson, Enrique	6

Figure1:Name Cloud of The Most Productive Scholars in XBRLStudies



Source: Created by the author using wordart application. (https://wordart.com/create , 05.02.2022)

5.5. Top 20 Highly Productive and Highly Cited Journals ofXBRLStudies

Table 5 presents the most cited authors and journals related to the XBRL field. Hodge, FD; Kennedy, JJ; Maines, LA's "Does search-facilitating technology improve the transparency of financial reporting?" was the most cited article with 239 citations, while Grabski, Severin V.; Leech, Stewart A.; Schmidt by Pamela J. "A Review of ERP Research: A FutureAgenda for Accounting Information Systems" second with 176 citations; Debreceny, Roger; Farewell, Stephanie; Piecocki, Maciej; Felden, Carsten; Graening, Andre “Does it add up? “Early evidence on the data quality of XBRL filings to the SEC” came in third with 106 citations.

Table 5. Top 20 Highly Productive and Highly Cited Journals of XBRL Studies

Rank	Author Names	Article Title	Journal Name	Times Cited, All Databases
1	Hodge, FD; Kennedy, JJ; Maines, LA	Does search-facilitating technology improve the transparency of financial reporting?	Accountıng Revıew	239
2	Grabski, Severin V.; Leech, Stewart A.; Schmidt, Pamela J.	A Review of ERP Research: A FutureAgenda for Accounting Information Systems	Journal Of Informatıon Systems	176
3	Debreceny, Roger; Farewell, Stephanie; Piechocki, Maciej; Felden, Carsten; Graening, Andre	Does it add up? Early evidence on the data quality of XBRL filings to the SEC	Journal Of Accountıng And Publıc Polıcy	106
4	Yoon, Hyungwook; Zo, Hangjung; Ciganek, Andrew P.	Does XBRL adoption reduce information asymmetry?	Journal Of Busıness Research	99
5	Kim, Joung W.; Lim, Jee-Hae; No, Won Gyun	The Effect of First Wave Mandatory XBRL Reporting across the Financial Information Environment	Journal Of Informatıon Systems	95
6	Pinsker, Robert; Li, Shaomin	Costs and benefits of XBRL adoption: Early	Communıcatıons Of The Acm	80

		evidence		
7	Blankespoor, Elizabeth; Miller, Brian P.; White, Hal D.	Initial evidence on the market impact of the XBRL mandate	Revıew Of Accountıng Studıes	68
8	Plumlee, R. David; Plumlee, Marlene A.	Assurance on XBRL for Financial Reporting	Accountıng Horızons	66
9	Debreceny, Roger S.; Farewell, Stephanie M.; Piechocki, Maciej; Felden, Carsten; Graening, Andre; d'Eri, Alessandro	Flex or Break? Extensions in XBRL Disclosures to the SEC	Accountıng Horızons	60
10	Boritz, J. Efrim; No, Won Gyun	The SEC's XBRL Voluntary Filing Program on EDGAR: A Case for Quality Assurance	Current Issues In Audıtıng	57
11	Troshani, Indrit; Doolin, Bill	Innovation diffusion: a stakeholder and social network view	European Journal Of Innovatıon Management	55
12	Vasarhelyi, Miklos A.; Chan, David Y.; Krahel, J. P.	Consequences of XBRL Standardization on Financial Statement Data	Journal Of Informatıon Systems	54
	Bozanic, Zahn; Hoopes, Jeffrey L.; Thornock, Jacob R.; Williams, Braden M.	IRS Attention	Journal Of Accountıng Research	54
13	Liu, Chunhui; Wang, Tawei; Yao, Lee J.	XBRL's impact on analyst forecast behavior: An empirical study	Journal Of Accountıng And Publıc Polıcy	53
14	Elliott, RK	Twenty-first century assurance	Audıtıng-A Journal Of Practıce & Theory	52
15	Janvrin, Diane J.; No, Won Gyun	XBRL Implementation: A Field Investigation to Identify Research Opportunities	Journal Of Informatıon Systems	51

	Henderson, Dave; Sheetz, Steven D.; Trinkle, Brad S.	The determinants of inter-organizational and internal in-house adoption of XBRL: A structural equation model	International Journal Of Accounting Information Systems	51
	Hoitash, Rani; Hoitash, Udi	Measuring Accounting Reporting Complexity with XBRL	Accounting Review	51
16	Boritz, J. Efrim; No, Won Gyun	Assurance on XBRL-Related Documents: The Case of United Technologies Corporation	Journal Of Information Systems	48
	O'Riain, Sean; Curry, Edward; Harth, Andreas	XBRL and open data for global financial ecosystems: A linked data approach	International Journal Of Accounting Information Systems	48
17	Perdana, Arif; Robb, Alastair; Rohde, Fiona	An Integrative Review and Synthesis of XBRL Research in Academic Journals	Journal Of Information Systems	42
18	Efendi, Jap; Park, Jin Dong; Smith, L. Murphy	Do XBRL filings enhance informational efficiency? Early evidence from post-earnings announcement drift	Journal Of Business Research	41
	Dong, Yi; Li, Oliver Zhen; Lin, Yupeng; Ni, Chenkai	Does Information-Processing Cost Affect Firm-Specific Information Acquisition? Evidence from XBRL Adoption	Journal Of Financial And Quantitative Analysis	41
19	Du, Hui; Vasarhelyi, Miklos A.; Zheng, Xiaochuan	XBRL Mandate: Thousands of Filing Errors and So What?	Journal Of Information Systems	40
20	Bartley, Jon; Chen, Al Y. S.; Taylor, Eileen Z.	A Comparison of XBRL Filings to Corporate 10-Ks-Evidence from the Voluntary Filing Program	Accounting Horizons	39

5.6. XBRLStudies Literature in Various Countries and Highly Productive Organizations (Top 20)

Considering the geographical distribution of scientific articles, USA is at the top of the list with 235 publications among 17 countries. The other two countries contributing to the XBRL literature are the UK with 91 publications and

the Netherlands with 47 publications, respectively. Also, considering the institutions contributing to the XBRL literature (Table 6), Amer Accounting Assoc. at the top of the list (f=85), followed by Emerald Group Publishing Ltd. (f=39) and IEEE (f=33) (Table 7).

Table 6. XBRL Studies Literature in Various Countries

Rank	Country	f	%	Rank	Country	f	%
1	Usa	235	45,11	18	Greece	2	0,38
2	England	91	17,47	19	India	2	0,38
3	Netherlands	47	9,02	20	Slovakia	2	0,38
4	Germany	29	5,57	21	Sweden	2	0,38
5	Switzerland	23	4,41	22	Argentina	1	0,19
6	France	12	2,30	23	Canada	1	0,19
7	Romania	10	1,92	24	Chile	1	0,19
8	Czech Republic	9	1,73	25	Croatia	1	0,19
9	Australia	7	1,34	26	Hungary	1	0,19
10	Poland	7	1,34	27	Italy	1	0,19
11	Singapore	6	1,15	28	Nigeria	1	0,19
12	South Korea	5	0,96	29	Portugal	1	0,19
13	Spain	5	0,96	30	Russia	1	0,19
14	Malaysia	4	0,77	31	Serbia	1	0,19
15	Peoples R China	4	0,77	32	Taiwan	1	0,19
16	Japan	3	0,58	33	Thailand	1	0,19
17	Lithuania	3	0,58	34	Ukraine	1	0,19
					Total	**521**	**100**

Table 7. Top 20 Highly Productive Organizations of XBRL Studies

Rank	Organizations	f
1	Amer Accounting Assoc.	85
2	Emerald Group Publishing Ltd.	39
3	IEEE	33
4	Elsevier Science Bv	23
5	Wiley	21
6	Springer-Verlag Berlin	18
7	Igi Global	16
8	Elsevier	15
9	Springer	14
10	Atlantis Press	12

11	Palgrave Macmillan Ltd	12
12	Springer International Publishing Ag	12
13	Elsevier Science Inc.	11
14	Routledge Journals, Taylor & Francis Ltd.	11
15	İeee Computer Soc	9
16	Destech Publications, Inc.	6
17	Elsevier Sci Ltd.	6
18	Ios Press	6
19	Pergamon-Elsevier Science Ltd.	6
20	Editura Ase	4

Figure 2: Word **Cloud of Keywords**



Source: Created by the author using wordart application.
(https://wordart.com/create , 05.02.2022)

XBRL and its applications, IFRS applications, accounting information systems, corporate management applications, standard business reporting concepts constitute the focus areas of the studies, as can be seen in Figure 2, in the word cloud made by considering the "Keywords" part of the publications to see which concepts are researched with XBRL. Studies show that the authors' XBRL reporting language is a widely used, accepted language for corporate reporting.

6. Conclusion

Today, companies present their financial statements to their stakeholders online. Firms generally use formats such as Html, Pdf, word, excel while publishing their financial statements. Since there is no standard in the financial reporting formats used, this information creates great problems for users. In-

formation users have to re-enter data in order to analyze and analyze different types of financial statements. This situation causes erroneous data entries, deterioration of data integrity, loss of time and cost increases. Looking at the financial reports of the world's leading companies in recent years, most of them use XBRL as the format. This situation shows that it will be very useful to use the XBRL format to standardize the financial reports prepared in different formats by the companies using different accounting standards in the world.

This study provides a bibliometric overview of XBRL literature published through 2002-2022 (February) and indexed in the Web of Science database. Results indicated that; the vast majority of XBRL studies are published as an "article" (%57.01) and "proceedings paper" (32.82 %). Respectively, USA (45.11 %), England (17.47 %) and Netherlands (9.02 %) are the top three leading countries that contribute to the XBRL literature. Journal Of Information Systems is a prominent domain of XBRL research (8.25 %). Findings also demonstrated that Troshani, Indrit is the most productive scholar in the field of XBRL whereas Hodge, FD; Kennedy, JJ; Maines, LA with the "Does search-facilitating technology improve the transparency of financial reporting?" the most cited (f=239) article in the WoS. Finally, the significant increase in the number of publications in the field of XBRL since 2008 results in the fact that the subject has gained momentum among academics in recent years.

REFERENCES

1. Bai, Z., Sakaue, M., & Takeda, F. (2014). The Impact of XBRL Adoption on the Information Environment: Evidence from Japan. *The Japanese Accounting Review*, 49-74.
2. Faboyede, S., Nwobu, O., Akande, O., & Oladipo, O. (2020). Extensible Business Reporting Language (XBRL): A Tool for Accounting Education in the 21st Century . *Journal of Accounting, Finance and Auditing Studies*, 85-97.
3. Fedorowicz, J. (2003). Integrating XBRL Into the Accounting Curriculum. *Review of Business Information Systems*, 51-61.
4. Francesca, B., Andrea, C., Andrea, F., & Michela, S. (2019). *Twenty Years of XBRL: What We Know and Where We Are Going.* Meditari Accountancy Research.
5. Hoitash, R., & Hoitash, U. (2018). Measuring Accounting Reporting Complexity with XBRL. *THE ACCOUNTING REVIEW*, 259-287.
6. İşbil, N., Köroğlu, A., & Zaif, F. (2021). Digital reporting in accounting: XBRL and integration to accounting department curriculum. *Gazi İktisat ve İşletme Dergisi*, 188-202.
7. Karabınar, S., & Yılmaz, E. (2012). Xbrl (Genişletilebilir İşletme Raporlama Dili) Ve Geleneksel Finansal Raporlama Sistemlerindeki Sorunların Çözümüne Katkıları. *Muhasebe ve Vergi Uygulamaları Dergisi*.
8. Karasioğlu, F., & Eryiğit, O. (2005). Finansal Raporlama ve Xbrl. *Süleyman Demirel Üniversitesi İİBF Dergisi*, 133-152.
9. Martin, N., & Riches, T. (2010). *A Practical guide to iXBRL for tax advisers.*
10. Özbağ, G. K., Esen, M., & Esen, D. (2019). Bibliometric Analysis of Studies on Social Innovation. *International Journal of Contemporary Economics and Administrative Sciences*, pp. 25-45.
11. Ping, W. (2021). Data mining and XBRL integration in management accounting information based on artificial intelligence. *Journal of Intelligent & Fuzzy Systems*, 6755-6766.
12. Rahwani, N. (2019). XBRL based Corporate Tax Filing in Indonesia. *ScienceDirect*, 133-141.
13. Shkulipa, L. (2021). Blockchain, Xbrl, Ifrs Relevance Among Current Accounting Publications: Quantification Of The Largest Publishers. *International Journal of Economics, Management and Accounting*, 433-497.

14. Sun, W. (2017). A Study on XBRL Based Value Chain Accounting Information Processing. *The 6th International Conference on Industrial Technology and Management.* Xiamen, P.R. China: Tan Kah Kee College Xiamen University.
15. Uday, M., & Groomerb, M. (2004). A Continuous Auditing Web Services Model for XML-Based Accounting Systems. *International Journal of Accounting Information Systems*, 139-163.
16. Uyar, S., & Çelik, M. (2006). Sürekli Kamuyu Aydınlatma Ve İnternet Ortamında Finansal Raporlama Sürecinde Kullanılan Diller. *DergiPark*, 93-103.
17. XBRL International. (2022, 02 08). *https://www.xbrl.org/*. Retrieved from https://www.xbrl.org/the-standard/what/an-introduction-to-xbrl/
18. Wordart, (2022, 02 05). Retrieved from: https://wordart.com/create
19. Yardımcıoğlu, M., & Özer, Ö. (2011). Genişletilebilir İşletme Programlama Dili (XBRL). Kahramanmaraş.
20. Yılmaz, E. (2012). *Finansal tabloların XBRL İle Raporlanmasının Sağlayacağı Üstünlükler Ve Taksonomi Önerisi.* Sakarya Üniversitesi Sosyal Bilimler Enstitüsü.