DATA QUALITY AND APPLYING SOCIAL NETWORK FOR FINANCIAL STATEMENTS

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Abstract

After the adoption of international accounting standards, correctness and consistency of the content of earnings has been an important issue for the declaration of the financial statements. Therefore, this study builds an audit system for IFRSs financial statements to check correctness and consistency of financial statements that investors and relevant units can confirm their information quality. According to the experimental results, the audit system can effectively identify the problems of corporate financial statements. Finally, the study use social network analysis technology to analyze the financial statements that easier to understand the relationship between the parent and child companies.

Keywords: Social networks, Computer audit, Design research methods, XBRL

1. INTRODUCTION

IFRSs has become the single criterion of the global capital markets and the necessary trend of international capital markets. There are more than 115 countries has required or planned adopt IFRSs for domestic companies. To enhance comparability between domestic companies and international corporate financial statements, and reduce the domestic companies to finance costs overseas.

Jeanjean and Stolowy (2008) found that the degree of earnings management increased after adopted IFRSs in Australia, France and United Kingdom, the reason is IFRSs rely on professional accountants and must be an honest and open manner to measure fair value. But,

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it is difficult to ensure the quality of the accountant.
Since Taiwan adopt IFRSs in 2013, many companies have financial reporting corrections. According to our survey, listed companies to declare financial statements with XBRL format from 2010 to 2012, there are 40 companies have announcement to modify XBRL financial statement.

In Taiwan, government and the accounting firm also noted that this situation is serious, and publish document “IFRSs Financial reporting should be noted with common deficiencies” that its aims to remind the companies should be pay attention to the common deficiencies of financial statements to reduce the deficiencies and enhance the overall quality of financial statements. This phenomenon is not common before adopting IFRSs, if the event would normally be classified as part of the internal weakness that may cause significant fluctuations in stock prices (such as 2010 Chang-Xing Chemical misplaced earnings events) will cause a major investor loss. Companies should be pay attention to deficiencies of financial statements after adopt IFRSs. Therefore, this study proposes a method to audit IFRSs financial statements, making investors and government to confirm the quality of financial information. Further, the study use social network to analyze the financial statements that easier to understand the relationship between the parent and child companies that make IFRSs financial statements easier to read.

Further, the prior studies did not investigate the impact of social network in subsidiaries on operational performance, this study explore the impact of social networks in subsidiaries on the operational performance of the companies. The study has following objectives:
1. Providing a IFRSs financial statement auditing methods, making investors and government to confirm the quality of its information.
2. Through the social network analysis technology make IFRSs financial statements easy to read.
The structure of this study is as follows, chapter one describe research motivation, problem and purpose. The second chapter is the literature, the third chapter describes research methods, the fourth chapter is development of data quality inspection module, the fifth chapter is the development of social network analysis module, and Chapter 6 is the conclusion and suggestion for the study.

2. RESEARCH METHODS AND STRUCTURE

2.1 Research Structure

In this study, the establishment of an IFRSs financial statement investment network system to audit whether there is a non-compliance or misplaced financial statements under the new system XBRL financial statements. The study also provides a audit mechanism for government and investor reference to help improve the reading of a large number of complex

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information.

This study structure is divided into two modules to carry out, respectively, data quality modules and social network analysis module. The first part of the data quality audit module, we have established a data quality detection module to detect the quality of IFRSs financial statements of investment information, and audit the integrity of the XBRL financial statements. The second part is the social network analysis module, we build a social network analyze module to empirical research in social network analysis technology that included in the consolidated financial statements of subsidiaries (hereinafter referred to as subsidiaries form) and investee company name, area (hereinafter referred to as the investee company form) to carry out correctness and consistency audit with investment network density index's calculation and analysis. Analysis results are presented with the interface platform will be linked to the results of the above analysis of systematic social network interface to graphics and tabular presentation.

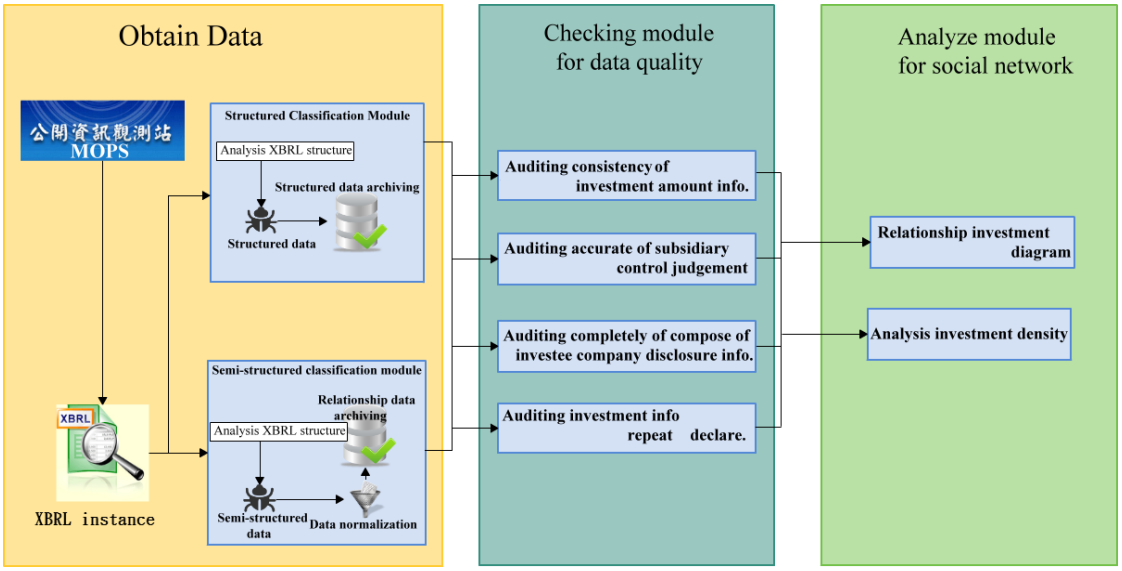


Fig 2 System Structure

2.2 Data Quality Audit Module Data Obtained

This research sample data period is the 2013 fourth quarter consolidated financial statements of listed companies in general industry after Taiwan implement IFRS. This research information is provided by MOPS (market observation post system) XBRL statements and XBRL taxonomies, and use the upload tool which developed by ourselves to upload to database.

3. DATA QUALITY

In this study, a computer audit software ACL is used to verify the system's results; there are four modules: duplicate audit, audit to correctness judgment of subsidiary control, investee company disclosure information composition integrity audit and investment information

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consistency audit. The four modules confirm completeness, correctness and consistency of XBRL consolidated financial statements note disclosure. Notes disclosure is one of the criteria for the international spirit of IFRSs, this study use information of subsidiary forms and investee company form in notes disclosure as example to conduct financial statements anomaly detection, and collate note disclosure issues of listed companies in Taiwan for the government and academic research subsequent reference.

3.1 Data Quality System Structure

This section explains how to achieve objective of data quality through the computer audit software ACL. Structure is shown in Fig 3, the first import data of structured and semi-structured modules by ACL, then data upload to the system database in the same time, to audit consistency of investment amount information, accurate of subsidiaries control judgment, auditing completely of compose of investee company disclosure information and auditing investment information repeat declare, finally, return data which has quality to system for subsequent use.

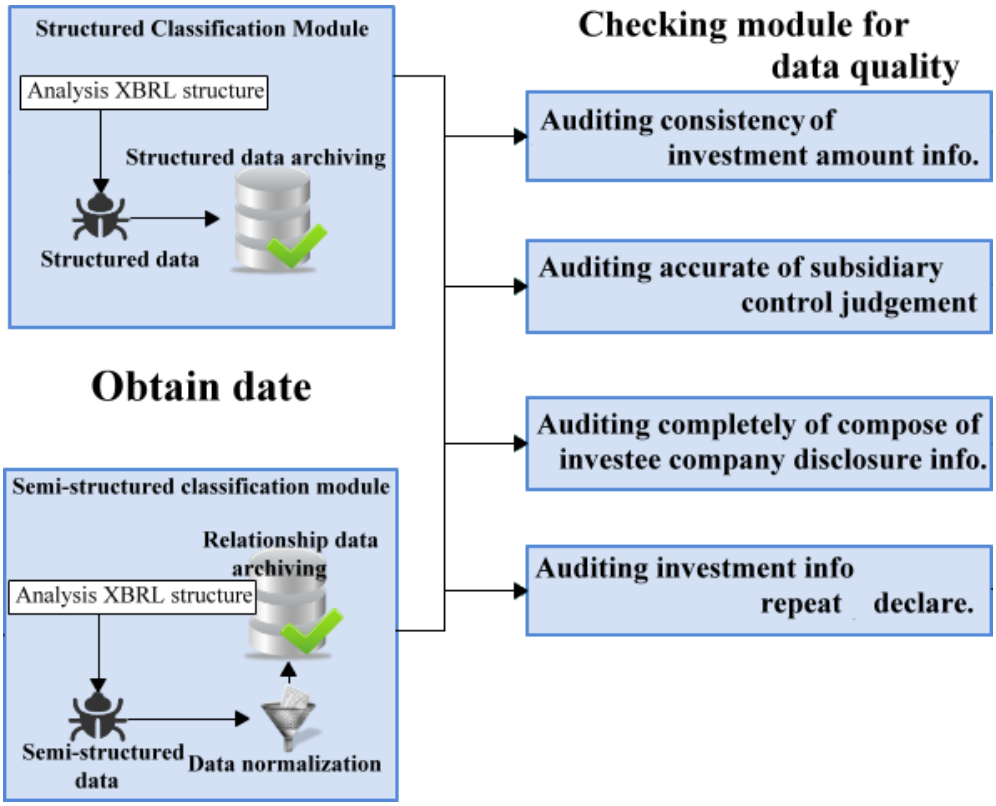


Fig 3 Audit data quality module structure

3.2 Information Quality System Assessment

This study used 2013Q4 consolidated financial statements in listed companies in general industry. Through accurate of subsidiaries control judgement, completely of compose of investee company disclosure information, consistency of investment amount information and investment information repeat declare that find the note and disclosure in Taiwan declare

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IFRSs financial statements correctness still have a very large improvement room.

4. SOCIAL NETWORK ANALYSIS

Through a visual interface mechanism, the user can select it you want to view and compare the IFRSs consolidated financial statements of the companies, and then through the system to calculate the density of the index and the financial index, and compare consolidate financial information with each other from XBRL consolidated financial statements.

Through the interface visualization mechanism, the user can select the financial statements that he wants and compare the corporate financial statements, and then calculate the density and financial indicators through the system, and compare the financial information from the XBRL consolidated statement.

4.1 Social Network Analysis System Structure

In this part of the research, we use the data from checking module of data quality available to analyze the social network. Using PHP, MYSQL database and combinations D3.JS, to build a website platform, and the information in the company's investment relationship presented with the social network, and finally calculate the investment density indicators, expect to simplify the IFRSs financial statements make it easy to read and investors can use different angles to view IFRSs consolidated financial statements.

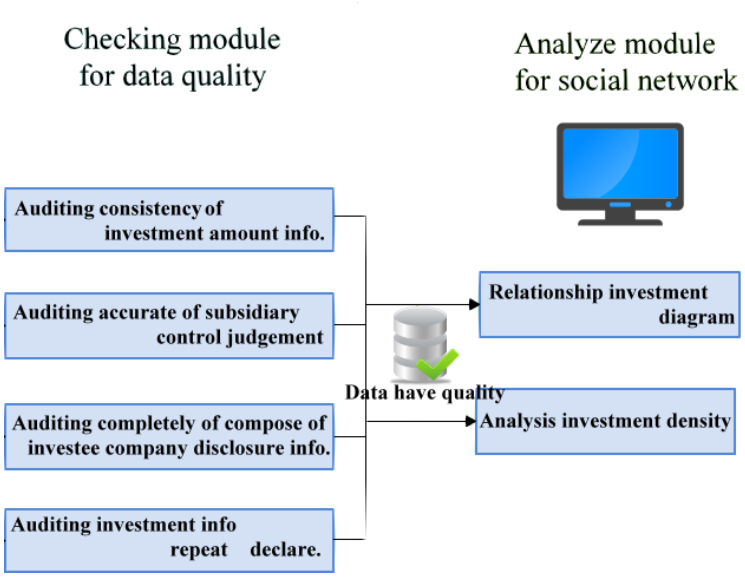


Fig 4 Social network analysis module

4.2 Investor Relations Diagram

This study use of social networks to display subsidiaries and investee company’s relationship network diagram, let the relevant units and investors can use a simpler way to view the company’s financial statement information, and result through the audit program to appear.

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Information appears JavaScript graphical interface output of some of the major use D3.js, with PHP and MYSQL database program will analyze the results output to the front part of the page.

Undertake a checking module of data quality, the output matrix occurs once converted into two adjacency matrix as follows:

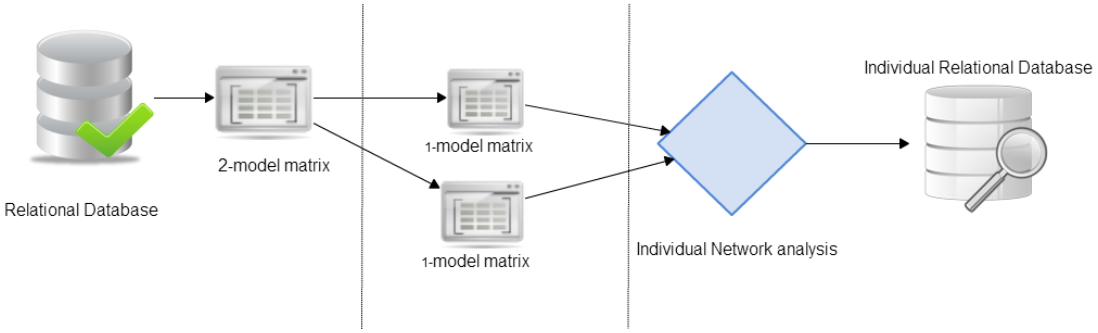
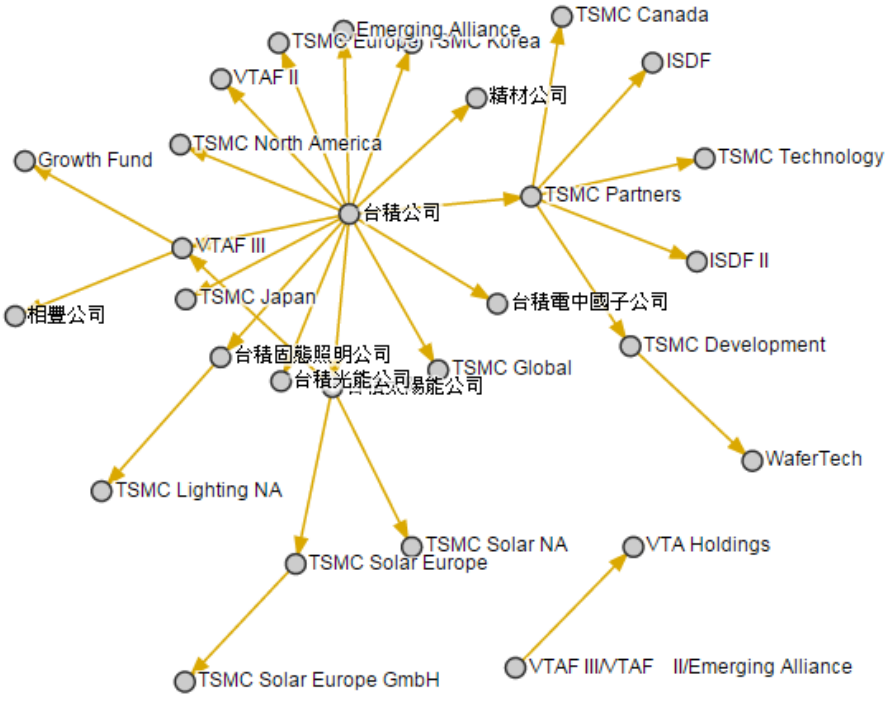


Fig 5 Matrix converted process diagram

Adjacency matrix is divided into multi - valued matrix and binary matrix. In this study, matrix transformation is carried out according to different analysis objectives. The fig. 6, shows the form of IFRSs consolidated financial statements and the form of the investee company and social network map:



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Fig 6 TS◯C 2013Q4 subsidiary of a social network diagram

So we can be complex relationships in financial report into a social network diagram, it is evident from the figure in investment company associated with the relationship between the individual and the subsidiary relationship, improve readability of the statements, further, we can overlap the subsidiary form and investee company form to achieve the effect of cross-comparison.

5. CONCLUSION AND SUGGESTION

2010 ChangXing Chemical Company in financial statements made a mistake on EPS, resulting in a significant loss of money and reputation on the company. According to survey from the National Chung Cheng University in Accounting and Information Technology Institute survey from 2010 to 2012, company financial statements XBRL format have 40 companies in various industries published XBRL financial statements need to correct that show the accuracy of the financial statements have yet to be strengthened in Taiwan.

With connect international, we must confirm the accuracy and consistency of the declaration of the financial statements and the IFRSs financial statements not only communicate between company with investor, but also a gate for company to connect international. To enhance comparability between domestic companies and international companies financial statements, which reduces domestic companies cost of overseas financing and enhance the international competitiveness of Taiwan's capital market and attract foreign investment in the domestic capital market, this research develop IFRSs financial statements investment network system that provides the suited financial statements of investment networks correctness, consistency and completeness of function, hoping to assist investors and related units better understand the companies and assist the companies audit financial statements.

In data quality, this study found higher rates of companies judgment deletion occurred in control of the subsidiary, and the rate of investee company revealed part of the composition of the integrity of information is also high, audit the results appeared several companies have serious errors misplaced financial statements, or even not properly filled in the declaration from severely affected. In the investment consistency audit found 30 abnormal problems. Finally, audit of investment information to repeat the declaration found 85 have repeated declaration circumstances. The relevant units should pay more attention to the occurrence of such situations.

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