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# Analysis of Social Network in the Field of Accounting

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**ABSTRACT**

*In a field like accounting, the flow of information, financial reports, analyzed data and many other resources in a social connection pattern is required for the proper functioning or operation of the audit firm, auditors and management teams. This research reviewed many literatures that focused on the application of social network analysis in accounting services, like auditing, management and accounting researches. The impact of social network or relationship among auditor, audit firms, investors, lenders, management teams and researchers in accounting sector, is highly positive, due to its help in the dissemination of important information and other resources, increase in the investment return and its facilitation in researching and publication of numerous accounting articles in high impact journals, which will help in education and acquiring of professional accounting qualifications.*

***Keywords:*** *Social Network Analysis; Accounting Field; Nodes and Ties*

## 1. Introduction

Social connection has a major impact on human decision-making, and this connection exists on the basis of many social media platforms such as Facebook, LinkedIn, telegram, and twitter. Many studies in natural and social sciences have examined human and inter-organizational relationships or connections and their observation resulted in the development of a formal model called social network analysis (Pietro, Monika, Miguel, & Villamil-Otero, 2019). Social network analysis is predominantly a quantitative research method which deals with a collection of tools that could be used to study interaction, associations, and communications which could be implemented through visualization or mathematical analysis (Saqr & Alamro, 2019) and has been used in many fields like accounting, to study and analyze interdependency or relational concepts, other than in the study of a single independent variable. Social Network Analysis (SNA) concentrates on how members of a group or team can collaborate to accomplish a defined goal (Ajibade, Abimbola, & Ojianwuna, 2021). The different accounting activities where SNA has been implemented include; reporting of financial transactions, auditing and audit quality, investor and lender decisions and statements, analysis, and analyst behavior, management compensation, and development of tax strategies.

Many previous kinds of research done on the accounting and auditing field, is based on substantialist perspective which studies individual or single variables and lacks the relational standpoint, which assumes that variables or factors are not independent and that their effectiveness or purposefulness is majorly reflected in their association with other variables. This idea argues that no individual variable stands alone in the world of accounting research and tries to enhance the understanding of the relational mechanism in form of ties that exist between nodes or factors in a particular empirical context and SNA has been proved to be the best tool for approaching or tackling problems on relationships among social entities, the pattern, and implication of these relationships (Wasserman & Faust, 1994). A network consists of a set of nodes which could be individuals, organizations, and teams, connected by ties which could be trust, collocation, affiliations, and advice. SNA is a powerful tool for conducting accounting information system-related researches that identify new opportunities, for the accounting field to identify new network structures and dynamic transactional data (Worrell, Wasko, & Johnston, 2011). The recent development shows that auditor partners that manage a team on a particular project, do change affiliations, relate and collaborate with partners in other audit firms. Later technological advancements have augmented the fluctuation and relationship between audit staff, audit firms, and outside audit institutes (Slobodan & Dean, 2017). So, the interdependency concepts in accounting and auditing are more appropriately studied using a network research method (Robins, Pattinson, & Wang, 2009) and the aim of this research is to study the application of social network analysis in accounting researches.

### Objectives

I. To review the importance of social network perspective
II. To study the impact of social network analysis in different accounting services
III. To study the outcome of social network application in accounting researches
IV. To study the limitations of social networks in accounting fields

### Statement of Problem

Many kinds of research done in accounting fields are classical dependent-independent assumptions that make use of statistical packages like the linear regression method. There are few works done on relational aspects, and even the few made use of linear regression and other methods not giving full detail on the ties that exist between nodes in a social network. So, this research tries to evaluate the role of social network analysis in some areas of accounting services, the benefits and elevation it can bring to interdependency-based accounting researches.

## 2. Social Network Analysis

SNA is a concept that was first introduced in the United Kingdom and the United States in the mid-50s but was first used by a set of special Navy project officers. The dyad or relationship between two or more nodes (individual or organization) is the building block of a social network study (Borgatti & Everet, 1997), so the pattern used by social networks is dyadic. According to Kumar & Laura (2015), relationship in this context is the association and flow of material and non-material resources among different nodes in a network and also noted that every actor or firm is a part of an intertwined network or relationships. SNA studies can be conducted at two different levels, but interconvertible levels, which are the one-mode and two-mode study patterns. The one-mode study pattern is always done with rows and columns in a matrix, which represents the same group of nodes and the two-mode

pattern, with rows and columns denoting different sets of nodes (actors), and it can be converted to the one-mode matrix by use of an affiliation method seen in UCINET (an SNA package) (Borgatti, Everet, & Johnson, 2013). Many theories have been used in the description and study of SNA, which includes Wasserman and Faust's theory, stating that connected nodes in all social structures are interdependent and are related through ties that help in the channeling of information, material, and other useful resources within the network. The structure of this interdependency can constrain or enhance actions, and the kind of nodes or actors involved in the network determines the financial and social strength of the network (Wasserman & Faust, 1994). The various ways in which SNA can be applied are the construction and operation of organizations, the foundation of knowledge creation and communication, the dissemination of information and revolution; and the organization of the social network (Vera & Schnupp, 2006)

**The Two-Way Conduction of Social Network**

The 6 steps of Sociocentric (Whole-Network) Approach to SNA

I. Definition of the network and the different actors involved in the network, done by assessment of needs.
II. Development of a questionnaire-kind of instrument, to gather data about the network, mainly about other side actors that the participant associates with.
III. Collection of personal data from actors.
IV. Entering of the collected data to UCINET 6 (which is a comprehensible SNA package for analysis of social network data) (Borgatti, Everet & Freeman 2002)
V. Drawing of the data into Net draw (a Fragment of UCINET software package) (Borgatti, 2002).
VI. Use of software (UCINET) analysis to identify the source of information to note the ones that affect the decision-making of the actors more.

**The Egocentric (Personal Network) Approach to SNA**

This approach also follows similar steps (1–6) to the socio-centric approach with the addition of two steps

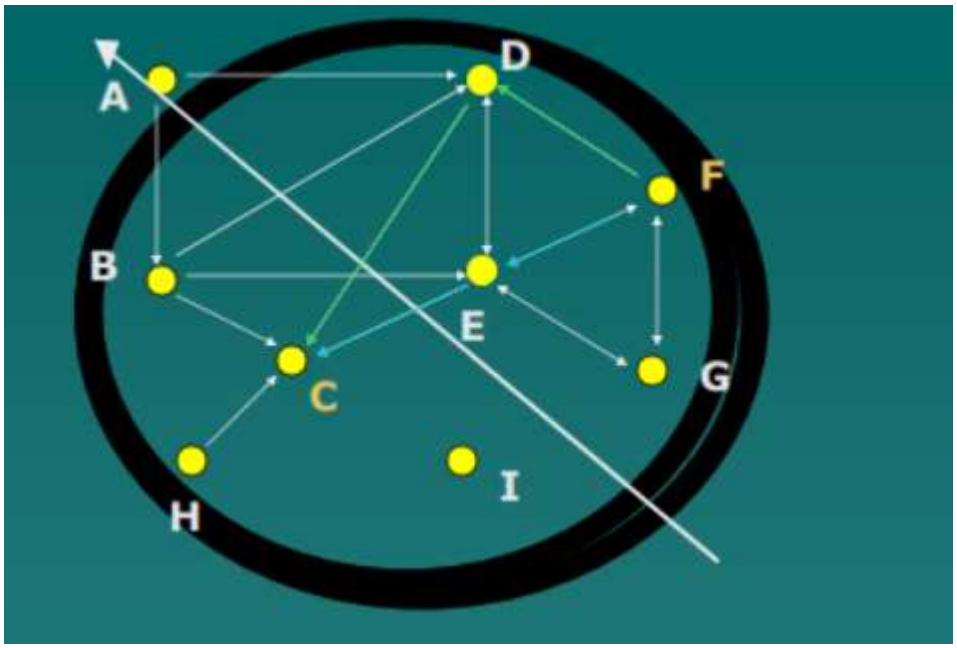
I. Conversion of the two-mode matrix of actors and their sources of data into a one-mode matrix using the affiliation process in UCINET software.
II. when the network of the nodes has been collected, the UCINET software (which is a comprehensive package for the analysis of social networks) can be used to extract a subgraph representing the network of the actors.

**3. Benefits of SNA in Accounting**

Social network analysis can enhance both the individual and management in planning, implementing, and controlling the different accounting services, capacity to solve the problems relating to the complex nature of some accounting services, and all these functions are completed within short periods. It also helps to facilitate effective and efficient project management and it is a simple quantitative approach (Ajibade et. al., 2021). The developed social network package is the best package for correct and effective evaluation or analysis of data collected in accounting researches involving the connection between authors. This network helps in scheduling and controlling important accounting services like analysis and auditing between liaising firms and reduces the amount of time it takes for every node in the network to accomplish a particular task assigned to it. The application of SNA to any accounting service leads to the creation of relevant inter-relationship and interdependence in the accomplishment processes of the services and among the service providers, thereby developing effective communication, availability and dissemination of valuable information that will help the different nodes in achieving their personal goals. The social network analysis is the best tool for different markets or business analysts to observe and understand the opportunities and potential clients hidden within the environs of an already existing network and to get a better method of approach to this diverse audiences. Social network is a powerful source of innovation and gives accounting firms a competitive advantage, it helps to investigate and identify social risks and key challenges hindering the achievement of most accounting projects, thereby developing set of solutions and recommendation to alleviate these challenges and void or maximize these risks, it also helps to build an adaptive space in an accounting firm which makes the accountants work in a dexterous way that helps to outperform the competition posed to their clients by other businesses. Finally, networking is the key predictor of high performance in an organization and is usually characterized by having broader and diverse problem-solving networks fueled with positive energy (Macro & Antonio, 2020).

**4. Application of Social Network Analysis to Accounting Activities**

Social networks can be used in accounting services to understand the flow of information and activities or communication between audit firms or auditors, between investors and creditors, and other financial managers in an accounting firm.




This diagram above represents a network involving different firms, where the dots represent nodes (actor A to I) which are the firms and auditors, while the lines represent the ties, which is the connection between the actors. The short lines between some nodes denote short-distance reachability, just like that between firm A and firm B, while the long lines denote long-distance reachability, just like the link between A and F. there is no reachability between other firms and firm I. The connection is a broad one, which does not mean number, but superior quality since it has a percentage density of 40, and this shows trust and cooperation.

**Auditing**

It is believed that clients relating with a common audit firm in a limited office, or partner share common features and that ties connecting auditors and public capital assets increase audit quality. Auditors in any firm always play scrutinizing function which is done by individual knowledge, freedom from the client, and character in the Workfront (Ajibade et. al., 2021)

Social connections can be said to have a positive effect, only when ties between auditors, audit firms, and their clients enhance the transmission of knowledge within the network and also lead to an increase in the capital asset of the auditor, and this is always the result in existing networks (Bianchi, 2018). But there are still situations where these connections cause a damaging or negative effect in the audit-client atmosphere, these negative effects occur when social connections threaten freedom of clients or auditors to actualize personal projects, and it happens mostly when audit managers in the network are appointed based on their personal connections with the board, without considering the impact the particular auditor will have on the organization and functionality of the network (Davison, Stening, & Wai, 1984). It can also occur due to the structure of the network, foundation, nodes, and ties involved in the network. Clients are expected to connect to auditors or audit firms with a large market base so that there will be an increased collection and dissemination of information, and revenue (Ajibade et. al., 2021). Finally, in network structure, the information of clients has to be confidential to an extent, but in the normal human nature, connections which allow the flow of information even at a minimal level, may also cause an unwanted spillover of a patented or trademarked clients' personal information, and also lead to acquiring and spread of corrupt or shady practices which is highly detrimental to the network and the nodes involved (Francis & Michas, 2013).

The strength of auditor-client ties varies, with the weakest connection being between clients operating with a common value in the same firm which is audited by different auditors and several limited offices because reputation

spillover and low-quality practices may occur (Li, Qi, & Tian, 2017), while the strongest tie is assumed to be same audit partner-client connection. Minute audit firms that are one of the nodes in an accounting association or network has a reasonably higher quality than some other firms, and their audit fees may be high (Bills, Hayne, & Stein, 2018), as they offer high quality audit services and good reputation, with a level of trust, since smaller closed or structural hole network is easier to organize but also comes with a loss of freedom or independence and now becomes disadvantageous to the firm (Davison, Stening, & Wai, 1984).

**Investor**

The focus in this aspect, is on the individual associations and the connection or networks between directors, fiscal forecasters, guarantors, financiers, and skilled investors, which could be an angel or venture capitalists. In some business environments where transparency is not practiced, or that are cloudy, investors' private interactions can alleviate agency and information irregularity (Hochberg, Ljungqvist, & Y. Lu, 2007) even though, these Private ties, can occasionally produce biased investment advice and inefficient fund distribution (Gu, Yang, & Li, 2019). Investor networks can accelerate the dissemination of information and capital distribution. It is believed that network connections or ties from informative and skilled setting can create links between individuals with a common motion to foster cooperation (Houston, Lee, & Suntheim, 2018), investors' attention in initial public offerings (Bajo, Chemmanur, Simonyan, & Tehranian, 2016), analysts' recommendations, forecast accuracy and social connections also enhances business connections, increases investment opportunities and returns due to cooperation and flow of information within the investors network (Rossi, Blake, Timmermann, Tonks, & Wermers, 2018). Investors network can also flop when the structure, nodes and ties in the connection is not well organized, and may stimulate highly biased analysts' endorsements and even the spread of personal or patented information (Ahern, 2017)

**Auditor and Analyst Ties**

In social accounting networks, there are firm to firm connections through a tie that can be an auditor and the tie in the firm network is usually the audit firm, the audit office, or the audit partner with an analyst as the controller. Firms controlled by one analyst will always have similar information requirements (Ajibade et. al., 2021), and the auditors in the network will serve as a vital canal for dissemination of relevant information for appropriate financial statements and economic results (Francis & Wang, 2020).So auditor networks is an imperative route for the transmission of financial data. In some type of networks, analysts also serve as ties between firms. This type of network where analysts or auditors could be the link or ties between firms, will facilitate the effective broadcasting of beneficial and compound information although they can intensify the blowout of unwanted practices. A multiplex network structure knows that firms are involved in various kinds of associations leading to different networks, and that the networks are based on interdependency perspective which affects method of work and also financial outcomes (Shipiloy, 2012), this shows a network overlap of three groups of ties which are the board interlocks or firms, shared auditors, and shared analysts, and according to Ajibade et. al. (2021), a firm placed at the juncture of these networks may gain increased benefits such as superior or first-class information availability and dissemination of information, especially in this complex nature of transaction and organization (Ajibade et. al., 2021)

**Management Advantages and Further Managerial Matters**

This part is focused on chief executive compensation, it is seen that the directors' or managerial teams' skilled connections with investors or lenders, firms, auditors and other executives affects the executive reward system (Hoi, Wu, & Zhang, 2019). The compensation of the different nodes in a network, just like the stake holders in a company depends on the amount or weight of investment in terms of human capital and financial capital. Some studies (Ditillo, 2012; Chenhall, Hall, & Smith, 2010) applied the social network view to their management control systems and regulation in accounting and discovered that the higher the number and quality of nodes connected by a solid tie in a network, the higher the strength of human and financial strength involved in the network, and so the higher the returns on investment, information and opportunities realized, thereby increasing the financial compensation of the managerial team and every other node in the network.

**5. Application of Social Network Analysis to Accounting Researches**

As stated above, the social network analysis deals with flow of material and non-material resources, when it comes to research in accounting fields, the material that flows are facts, observation, information or knowledge. A research concerning social network helps to create an important association required to comprehend social activities, as network is a group of nodes such as people, groups, or teams linked by ties which differs in direction, content and the level of strength (Worrell, Wask, & Johnston, 2013). The content means the financial, information, human capital and other resources involved within the network and the contributors of these resources determine the direction of the network. It is worth noting that values could be accorded to ties. Network analysis considers two major areas of hypotheses which include the relational ties and the structural ties and how powerful enough the ties are to conduct multimethod researches (Grunspa, Wiggins, & Goodreau, 2014). In a population that is engrossed on information availability, the success or failure of everyday events is strongly dependent on how current the individuals are throughout their execution steps. As posited by Britz & Ponelis (2012) the collective drive and information sharing progresses research and growth in all accounting fields, enabled by the collaboration and association of researchers in a form of accounting networks. Nelson (2004) also observed that sharing of information and knowledge helps to foster association with others in analogous activities. Researchers therefore have the edge of being effective in networking and dissemination of findings from the research. Writers like Amabile, et al. (2001) confirmed the importance of scholars' involvement in network communication and that collaboration between the accounting authors in the University has helped in publication of many articles in high impact journals. Ajibade et. al. (2021) conducted A study of Accounting researchers in a world class Private University in Ogun State the data obtained was analyzed using social network package, of which the results indicated that the social network is densely related meaning that there is a great level of co-authorship and alliance between the accounting authors which resulted in quality number of articles published on high impact journals, It revealed that there is a positive and strong relationship between authors, collaboration or connection and the number and quality of articles published in the high impact journals (Ajibade et. al., 2021). Nikzad et al (2011) also stated that the mean number of articles across all discipline of accounting and management sciences published in high impact journals has increased due to coordinated skills which facilitate the rate of manuscript acceptability in high impact journals (Nikzad, Jamali, & Hariri, 2011) and also according to Britz et al, the general movement of knowledge sharing improves research and growth in all accounting departments which also facilitates collaborations as well as social connections between the researchers (Britz & Ponelis, 2012).

**6. Limitations of SNA in Accounting**

When referring to the ego-centric approach in SNA, most researchers easily believe that a comprehensive attempt to get the entire network of a given person or group is an attainable task, but networks are comprised of both direct and indirect links, so network has unrestricted growth potential, and it is therefore up to the researcher to outline the extent of the data to be collected to analyze a specific object, and most times the consideration of the researcher will not be able to give a proper and comprehensive information or conclusion. Another limitation is the difficulty of making evaluations between networks. It is known that research in the field of network analysis is founded on mathematical principles, accounting researchers has to be enormously careful when making evaluations between different network of auditors, firms and investors, since it is not easy to note the positive and negative contribution of each node involved. It does not mean that comparisons or evaluation of different audit-firm networks are unachievable, but that networks must be considered within groups or organizations that are alike (Afonso, Agra, & Aguilena, 2018). Social accounting networks include both positive and negative relations, the negative relations of dislike, withdrawal, exclusion, or conflict between some connected firms in a network, may discomfort other firms or individuals involved (Scott, 2021).

**7. Conclusion and Recommendation**

There are a whole lots of benefits that comes from social network especially in accounting field where transactions are to be analyzed and information transferred to several teams, and for the fact that it is also a field that is highly involved In the economy of every nation, the connection between accountants, auditors, clients and analysts will help foster the availability and transfer of quality information required for the various stages of accounting services, a higher revenue will also be realized by investors in a case where they are involved in the network. There are many studies cited in this work which used UNICET, that is a highly comprehensible social network package to analyze the collected data, and the results are concurrent with the findings of this work.

**References**

Afonso, J., Agra, F., & Aguilena, C. L. (2018). Potentialities and Limitations of Network Analysis, Methodologies: A theoretical model focused on social sciences. *Open edition journal.*

Ahern, K. R. (2017). Information networks: Evidence from illegal insider trading tips. *Journal of Financial Economics,* 26-47.

Ajibade, A. T., Abimbola, A. j., & Ojianwuna, C. (2021). Application of Social Network Analysis in Accounting Researches in Privat University in Ogun State. *Journal of Finance and Accounting,* 127-137.

Amabile, T. M., Patterson, C., Mueller, J., Wojcik, Odomirok, Marsh, M., & Kramer, S. J. (2001). Academic practitioner collaboration in management research. *The Academic of Management Journal,* 418-431.

Bajo, E., Chemmanur, T. J., Simonyan, K., & Tehranian, H. (2016). Underwriter networks, investor attention, and initial public offerings. *Journal of Financial Economics,* 376-408.

Bianchi, R. (2018). Auditors' Joint Engagement and Audit Quality:Evidence from Italian private Companies. *Contemporary accounting research*, 1533-1577.

Bills, K. L., Hayne, S. E., & Stein. (2018). A Field Study on Small Accounting Firm Membership in Association and Networks: Implications for Audit Quality. *The Accounting Review,* 73-96.

Borgatti, & Everet. (1997). Netywork analysis of 2-mode data. *Social network journal*, 243-269.

Borgatti, S., Everet, M., & Johnson, J. (2013). Analyzing social network. analyzing social network publication. London: Borgatti et al.

Britz, J., & Ponelis, S. (2012). Social justice and the flow of knowledge with specific reference to African scholars. *Alia Proceedings,* 462-477.

Chenhall, R. H., Hall, M., & Smith, D. (2010). Social capital and management control systems: A study of a non-government organization. *Accounting Organization and Society,* 737-756.

Davison, A., Stening, B., & Wai, W. J. (1984). Audiotor C oncentration and the Impact of Interlocking Directorates. *Journal of Accounting Research*, 313-317.

Ditillo, A. (2012). Designing Management Control Systems to Foster Knowledge Transfer in Knowledge-Intensive Firms: A Network-Based Approach. *European Accounting Review,* 1-26.

Francis, J. R., & Michas, P. N. (2013). The Contagion Effect of Low-Quality Audits. *The Accounting Review Journal,* 521-552.

Francis, J. R., & Wang, W. (2020). Common auditors and private bank loans. *Contemporary Accounting Research Journal.*

Grunspa, D., Wiggins, B. L., & Goodreau, S. M. (2014). Do school ties between auditors and client executives influence audit outcomes. *Journal of Accountancy and Economics,* 506-525.

Gu, Z. Z., Yang, Y. G., & Li, G. (2019). Gu, Z., Z. Li, Y. G. Yang, and G. Li. 2019. Friends in Need Are Friends Inde Friends in Need Are Friends Indeed: An Analysis of Social Ties between Financial Analysts and Mutual Fund Managers. *The Accounting Review,* 153-181.

Hochberg, Y. V., Ljungqvist, & Y. Lu. (2007). Whom you know matters: Venture capital networks and investment performance. *The Journal of Finance,* 251-301.

Hoi, C. K., Wu, Q., & Zhang, Z. (2019). Does social capital mitigate agency problems? Evidence from Chief Executive Officer (CEO) compensation. *Journal of Financial Economics,* 1-22.

Houston, J. F., Lee, J., & Suntheim, F. (2018). Social networks in the global banking sector. *Journal of Accounting and Economics,* 65, 273-269.

Kumar, A. C., & Laura, A. W. (2015). introduction to social network research, application of SNA in extension. *Institute of Food and Agricultural Science journal.*

Li, L. B., Qi, G., & Tian, Z. G.-Q. (2017). The Contagion Effect of Low-Quality Audits at the Level of Individual Auditors*. The Accounting Review Journal,* 137-163.

Macro, N., & Antonio, A. (2020). Applying social network analysis to identify project critical factors. MDPI, 1-32.

Nelson, R. K. (2004). The market economy and the scientifi commons. *research policy journals,* 455-471.

Nikzad, m., Jamali, H. R., & Hariri, N. (2011). Patterns of Iranian co-authorship networks in social sciences; A comparative study. *Library and information science research journal,* 33, 313-139.

Pietro, A. B., Monika, C., Miguel, M.-M., & Villamil-Otero, R. (2019). Social Networks Analysis in Accounting and Finance. *SSRNElectronic journal.*

Robins, G., Pattinson, P., & Wang, p. (2009). Closure connectivity and degree distributions, exponential random graph models for directed social networks. *social networks,* 105-117.

Rossi, A. G., Blake, D., Timmermann, A., Tonks, I., & Wermers, R. (2018). Network centrality and delegated investment performance. *Journal of Financial Economics,* 183-206.

Saqr, m., & Alamro, a. (2019). The role of social network analysis as a learning analytics tool in online problem-based learning*. BMC medical Education Journal,* 1-11.

Scott, J. (2021). Criticisms and frequently asked questions "what is scial network analysis". *Bloomsbury collection,* 85-102.

Shipiloy, A. V. (2012). Strategic multiplexity. Strategic Organization, *Stratigic Organization,* 10, 215-222.

Slobodan, K., & Dean, L. (2017). Social network analysis in accounting and auditing*. International journal of academic research in accounting finance and management sciences.*

Vera, E., & Schnupp, T. (2006). Network analysis in comparative social sciences. *Comparative education journal,* 405-492.

Wasserman, s., & faust, k. (1994). Social network analysis: methods and application. Cambridge university press.

Wasserman, S., & Faust, K. (1994). Social network analysis; application and method. social network analysis: application and method. England: Cambridge University Press.

Worrell, J., Wask, M., & Johnston, A. (2013). Social network analysis in accounting information research. *international journal of accounting information system,* 127-137.

Worrell, J., Wasko, M., & Johnston, A. (2011). Social netwroking analysis in associating information systems research. *International Journal of accounting information systems,* 127-137.



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