

The Review of Board with its Expertise in Corporate Governance

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ABSTRACT

The aim of this paper is to provide a review of literature on board members with IT expertise and corporate governance. Information technology (IT) plays an increasingly crucial and essential role in business world nowadays. Prior research suggests that IT governance as part of corporate governance helps stakeholders to monitor and locate bad management behaviour, and board members with IT expertise is as one of important IT governance mechanisms. Thus, this study takes these arguments a step further by reviewing the relationship between board members with IT expertise and the quality of corporate governance. This study collects, analyses and concludes published articles in EBSCOhost, SpringerLink, Taylor & Francis and ScienceDirect. The result demonstrates that boards with IT expertise are more likely to encourage the use of IT across the firms and improve the quality of corporate governance, thereby decreasing internal control deficiencies and cyber security risks and improving the information environment that are revealed through numerous outputs of the firms.

Keywords:

Board with IT expertise; corporate governance; IT governance; board-level IT governance

1. Introduction

As the rapid development of information technology, IT integrates into enterprise on all sides. IT plays a more and more functional and strategic role on tactics and decision, which leads to a wider comprehending of IT governance [1]. IT governance provides a pathway forward required strategic oversight [2], particularly when IT governance is integrated as part of corporate governance's oversight of strategic risk management and internal audit outcomes. There are clear synergies between the goals of IT governance and corporate governance in managing risk exposure and delivering business value [3]. Corporate governance controls risk through internal controls and risk management, and IT is both key to risk management within internal control and organizational risk management [4]. An enterprise that utilizes IT for operations may require managers and employees with domain-specific knowledge and experience to understand the significance of IT on the strategic

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objectives and business operations [5]. Existing research considered that board members with IT expertise are important for IT governance [6]. Therefore, this study will focus on whether board members with IT expertise can improve the quality of corporate governance that are revealed through firms' performance.

Academic scholars pay increasingly attention on the more specific and relevant issues of IT governance related in board. Several prior studies have proven that more board involved in IT governance can improve performance of enterprises [7]. For example, Jewer and McKay [8] balance strategic choice theory and institutional theory to research board-level IT governance, they consider a board's involvement in IT governance relates to the contribution of IT to organizational performance positively [8]. Turel and Bart [9] studied empirically the effects of organizational IT usage patterns on the organizational performance and board-level IT governance [9]. Their key finding is that the board's involvement in IT governance depends on the organization's IT usage pattern, and board's participation in IT governance improves the performance of the enterprise. A more specific viewpoint is considered by Yayla and Hu [10], who put forward that board IT awareness affects organizational performance positively, and define board-level IT governance as "the extent to which the board is conscious of IT as a business function and able to formulate appropriate conceptions of what IT entails to their firm and industry" [10]. Khalil and Belitski [11] find that the functions of various board IT governance mechanisms are dynamic capabilities that are directly related to corporate performance [11].

Based on De Haes *et al.*, [12] research, the board's involvement in IT governance can be achieved by implementing a mix of structures, processes and relational mechanisms, board members with IT expertise as one of the vital components in improving the quality of IT governance [12,13]. Therefore, board members with IT expertise may improve board-level IT governance, thereby improving corporate governance and firm's performance.

2. Materials and Methods

A scoping review was conducted to answer the research questions. Since this paper's goal is to summarize research findings and create an agenda for future research, the scope review is well suited [14]. In order to rigorously conduct this review, the methodological framework created by Arksey and O'Malley [14] will be applied, the framework describes the five research steps of a scoping review. Table 1 shows a summary of these research steps and how they were applied in this review.

Table 1

Application of scoping review methodological framework

1. Identify the research question	Preliminary literature review
2. Identify relevant studies	Systematic literature procedure
3. Study selection	Definition of inclusion and exclusion criteria
4. Charting the data	Open coding and axial coding
5. Collating, summarizing and reporting results	<ul style="list-style-type: none"> ● Summarize results to answer research questions ● Identify gaps and discrepancies

The first step is to identify the main research question "how board with IT expertise impacts on corporate governance." Step 2 and 3 is to identify relevant studies and select studies. In order to identify relevant studies to include in this review, a systematic literature procedure was designed [15]. EBSCOhost, SpringerLink, Taylor & Francis and ScienceDirect were searched in parallel. The result of choosing those four databases is that they extensively cover the topic of IT governance. In this paper, 'corporate governance', 'IT governance' and 'board with IT expertise' will be search terms,

research that does not belong to the IT governance body of knowledge, and that is not focused on board-level or director-level matters were excluded. A fourth step in the scoping review framework consists of charting the data, open coding enabled the identification of the concepts included in board level IT governance research, while axial coding uncovered the causal relationships between board with IT expertise and corporate governance. The last step consists of collating, summarizing and reporting the results to answer the research questions, identify the gaps and discrepancies, enable the creation of an agenda for future research.

3. Results and Discussion

The findings and trends of previous literature will be present on table 2.

Table 2
 A Systematic Review of Board Members with IT Expertise on Corporate Governance

Board Members with IT expertise	Effect on Corporate Governance	Conclusions	References
CEOs with IT expertise	Positive	Decrease cyber security risks and losses	Hartmann and Carmenate, 2021; Haislip et al., 2017
	Positive	Upgrade IT system; improve the information environment; announce earnings on a timelier; make more accurate earnings forecasts	Haislip et al., 2016; Haislip and Richardson, 2018; Haislip et al., 2019
	Positive	Enhance IT risk management practices	Vincent et al., 2019
CFOs with IT expertise	Positive	Upgrade IT system; upgrade financial reporting system.	Haislip et al., 2015, 2016
	Positive	Decrease cybersecurity breaches losses	Haislip et al., 2017
IT executives	Positive	Decrease cybersecurity breaches losses	Higgs et al., 2016; Kwon et al., 2013
	Positive	Enhance IT risk management practices	Vincent et al., 2019

Based on previous literatures, board members with IT expertise can help to improve corporate governance oversight mechanisms. Firstly, board members with IT expertise can improve the quality of corporate governance to detect cyber security risks [16]. For example, board members with IT expertise could improve IT-related material weakness (ITMW) firm's performance. ITMW firms hire CEOs, CFOs, and directors who have higher levels of IT expertise, which makes significant IT system upgrade and ITMW firms remediate deficiencies in time by appointing a new CFO with IT expertise or upgrading their financial reporting system [17,18]. Besides, board members with IT expertise may improve IT systems in firms and increase the accuracy rate of earnings forecasts. For example, a CEO with IT expertise tends to encourage to utilize IT across the company and make more accurate earnings forecasts, and enterprise that have IT-expertise CEOs announce earnings on a timelier compared with firms that have non-IT-expertise CEOs [19].

Furthermore, board with IT expertise also decrease corporate losses and improve IT risk management. For example, organizations that have CEOs with IT expertise, CFOs with IT expertise and board-level IT committee tend to disclose cybersecurity breaches than those without board members with IT expertise and board-level IT committee [20]. In addition, Vincent et al. (2019) find

that the maturity of IT risk management practices is positively influenced by the board's involvement and the board that have IT expertise [21]. Furthermore, Kwon *et al.*, [22] show that top management team that involves in IT executives can reduce the possibility of cybersecurity breaches and the greater the difference between the compensation of IT and non-IT executives makes the lower the possible of cybersecurity breaches [22].

In conclusion, prior research connected board with IT expertise to IT-related issues such as cyber security breaches or IT system upgrade. This study takes these arguments a step further to encourage future research that board with IT expertise could be considered as a corporate governance mechanism. Therefore, the future research could may relate board with IT expertise to firms' performance, earnings management, audit quality, corporate social responsibility and so on.

4. Conclusion

This study concludes a relationship between corporate governance and board members with IT expertise and highlight the important role of board members with IT expertise on corporate governance by improving oversight mechanisms such as increasing information transparency, upgrading IT systems and controlling cybersecurity risks. In addition, board with IT expertise as one of corporate governance mechanism could relate to earnings management, audit quality, social responsibility in future research.

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