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BUILDING A CONCEPTUAL MODEL FOR INTERNAL AUDITING: THE PERSPECTIVE OF ABSORPTIVE CAPACITY THEORY

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Abstract:

The purpose of this paper is to present a conceptual model for internal auditing based on absorptive capacity theory. Internal auditing effectiveness is influenced by an organization's capacity to identify, assimilate, and apply new knowledge, according to the model. It has been determined that absorptive capacity is positively associated with innovation, performance, and competitiveness, making it a central concept in the literature of organisational learning. This study contends that internal audit functions contribute significantly to an organization's absorptive capacity by providing valuable knowledge, expertise, and perspective on internal control systems, risk management, and governance. An organisation can identify and learn from internal and external knowledge sources, including best practises, regulations, and industry developments, if its internal audit function is proactive and provides value-added services. In addition, a well-aligned internal audit function with the strategic objectives and culture of the organisation can facilitate the assimilation and application of new knowledge. The model suggests that internal audit functions can be improved by employing a risk-based approach that focuses on the organization's most significant risks and opportunities. This strategy can assist internal auditors in identifying and prioritising areas where new knowledge is required and in delivering more targeted and pertinent services. In addition, the model proposes that internal audit functions can be improved by leveraging digital technologies, such as data analytics and information technology, which can assist internal auditors in accessing and processing large quantities of data and delivering more efficient and effective services. This paper emphasises the significance of

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absorptive capacity for internal auditing effectiveness and provides a conceptual model that can guide the development of proactive and value-added internal audit functions. Practitioners, researchers, and policymakers interested in enhancing the performance and competitiveness of organisations through internal auditing may find the proposed model valuable.

Keywords:

Internal Audit, Information Technology, Absorptive Capacity Theory

Introduction

In the context of continuous growth in volume of data, internal auditors are getting more and more attentive in aiming to study the applications of IT. IA and IT have become unstoppably intertwined. IT knowledge is among the factors that significantly affect the IA occupation by the way organizations significantly conduct their business globally. In addition to relying on traditional documents, internal auditors also need to rely on new technology to gather the necessary data to provide proper opinions on financial statements (Dowling and Leech, 2014). Consequently, IT affects IA in several regards such as planning, data collection, acquired skills to perform an audit, essential technology to achieve IA job, risks faced with internal auditors in addition to implemented modern IA practices (Abou-El-Sood et al., 2015).

Developments in IT support IA, but they bring about challenges and more complex IT. Consequently, if companies, whether they are large or small, do not adopt new IT developments, they are at a disadvantage. Also, they will be exposed to increasing risk, fraud, abuse, inefficiency, failure to detect breaches, reduced reliability of financial statements, and weaknesses in IA tools and methodologies (Abbaszadeh et al., 2019; Lowe et al., 2018; Zerbino et al., 2018). These challenges arising from IT make it necessary to rethink the structure of companies and operations of internal audits (Abbaszadeh et al., 2019). As an internal auditor, need to be able to use various technological tools, such as data visualization and analytics, to enhance the effectiveness of internal auditor work. As well need to have the necessary skills to handle emerging technologies for instance artificial intelligence and machine learning. This is why internal auditors should be knowledgeable about the latest technologies in order to improve their efficiency and effectiveness.

Moreover, an internal auditor plays a vital role within an organization's technology-related internal control system. They can help prevent fraud and identify waste, and they have the necessary skills and knowledge to do so. Depending on their supervisor's direction, they can also play various other roles. One of the most significant factors that an internal auditor should consider when it comes to technology is the ability to automate certain aspects of their work, such as continuous monitoring. This will allow them to focus on higher-level functions and provide more effective and efficient services to their clients. IT is often used by companies to create a more effective control environment for their risk management. This can help them prevent human error and improve the efficiency of their operations.

Nevertheless, IA can no longer acquire and assimilate new IT itself in small steps, as was the previous case (Zahra and George, 2002 The goal of an organization is to transform itself into a more effective and efficient platform that can support the various operations of its customers. (Ahmi et al., 2016). This can be done through a comprehensive transformation that includes the use of emerging technologies and a more flexible workforce. At every phase of a company's

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transformation journey, it is important that the strategies for talent, process, and IT are designed to create a disruption that is created to meet the requirements of the organization and its environment. (Ahmi et al., 2016). Unfortunately, it is not always possible to achieve a comprehensive change in a big bang. (Abaidoo et al., 2015). One of the most important issues that an organization must think about when it comes to implementing its transformation strategy is the creation of a long-term plan. This will allow it to capitalize on the early success of the project and take on more complex elements. A comprehensive transformation can be done through various steps, such as individual behavioral adjustments and the use of advanced technology. It can be small or large. Furthermore, some internal auditors are unsure if IT would be appropriate and consistent with their existing audit practice (Abaidoo et al., 2015). IT on IA engagements has found that some internal auditors are not using sophisticated tools because they believe they can obtain the same evidence as the traditional audit (Abaidoo et al., 2015).+

Previous studies indicated the influences of IA characteristics on IT. Li et al. (2018) highlighted the influences of technological competence, standards and professionals in helping internal auditors to improve overall performance. However, Seo et al. (2015) and Khan et al. (2019) viewed that knowledge characteristics can influence the potential AC theory, e.g., skills and experience. Thus, it is needed to include different types of knowledge that affect potential AC.

Furthermore, Schmitz and Leoni (2019) suggested to explore the levels of technological understanding and skills needed by auditors. This study attempts to find out the relationship between internal auditors' characteristics and potential AC (acquisition and assimilation); whereby, the internal characteristics need to improve and apply new technology. It is important to find that out because it is necessary to determine internal auditors' ability to acquire and assimilate knowledge when adopting new technology; thus, this study tests the AC theory with the internal auditors' characteristics. This indicates to the next research question:

RQ. 1: Does internal auditors' characteristics affect their potential absorptive capacity?
IT supports managers in performing threat activities effectively, thus the approval of IT controls offers significant values to the organizations (Rae et al., 2017). Moreover, Abbaszadeh et al. (2019) suggested to further discover the IT environment and capability on internal control system. (Cenamor et al., 2019; Ince et al., 2016; Yang and Tsai, 2019) viewed that it is needed to investigate other potential mediating mechanisms that explain the AC theory. Therefore, this study attempts to find out the relationship between potential and realized AC, in addition to the mediating effect of internal auditors' role in technology-related internal control system between potential and realized AC. It is critical to find that out because when acquiring and assimilating (potential AC) new technology, an organization needs to have a system to better transfer and exploit (realized AC). This study tests the AC theory in internal auditors' role in technology-related internal control system. Thus, it proposes the following questions:

RQ. 2: Does potential absorptive capacity of internal auditors affect their realized absorptive capacity?

RQ. 3: Does internal auditors' role in technology-related internal control system mediate the relationship in their potential and realized absorptive capacity?
Internal auditors are interested to utilize IT for shortens the time of IA procedures (Mustapha and Jin Lai, 2017). Dowling and Leech (2014) recommended to further explore IT in auditing profession. Furthermore, Aliasghar et al. (2019) and Kale et al. (2019) indicated to explore how

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to help companies develop and introduce new processes, e.g., knowledge and innovation processes, using the AC theory in different fields. In this study intends to find out the issues of realized AC on firm performance and delve deeply into them by offering an understanding the mediating role of technology-related internal auditors' work processes. It is important to find that out because for any company to be able to better apply IT, there should be processes that help internal auditors to give the best results. IT introduces solutions for companies through more efficient management of assets in the generation of earnings for the growth of firm performance. There are many uses of technology that related internal auditors' work processes. Also, technology can be utilized to create internal auditors' doing reports and audit financial statements, and choose samples throughout procedures. This study finds it out by testing the AC theory in technology-related internal auditors' work processes. Thus, this study suggests the next research questions:

RQ. 4: Does realized absorptive capacity of internal auditors affect firm performance?

RQ. 5: Does technology-related internal auditors' work processes mediate the relationship in their realized absorptive capacity and firm performance?

Conceptual Models for Internal Auditing

The concept of AC process is defined as a set of capabilities that comprise acquisition, assimilation, transformation, and exploitation (Todorova and Durisin, 2007; Zahra and George, 2002). Figure 1 shows the effects of AC and IA on firm performance. The acquisition capability of a company can vary depending on its speed, intensity, and direction (Zahra and George, 2002). It is important for a company to be open to its environment and to be able to identify opportunities that it can take advantage of (Camisón and Forés, 2010). The second capability is assimilation, which involves analyzing and processing the acquired knowledge (Zahra and George, 2002). With a high assimilation capability, companies can use their employees' knowledge and experience to internalize new knowledge (Camisón and Forés, 2010). The third capability is to transform the acquired knowledge into a more effective and efficient asset. This process involves combining the new knowledge with the existing knowledge base (Zahra and George, 2002). Due to the increasing number of new knowledge sources, it is often necessary to remove or reinterpret outdated knowledge to ensure its compatibility with existing cognitive schemes (Pihlajamaa et al., 2017). This can lead to significant recognition of new opportunities (Camisón and Forés, 2010; Zahra and George, 2002). Through the exploitation of the acquired knowledge, a company can take advantage of the new knowledge to improve its operations (Camisón and Forés, 2010). Some of the typical outcomes of this process include the development of new products or the establishment of new patents (Todorova and Durisin, 2007; Pihlajamaa et al., 2017). The first two capabilities -potential AC- of an organization are focused on the acquisition of external knowledge and the value it can provide (Zahra and George, 2002). However, the third capability is considered a necessary part of the strategy to achieve performance goals (Pihlajamaa et al., 2017). The goal of a company's realized AC is to maximize the effectiveness of its individual capabilities.

However, there are various factors that can affect the efficiency of this process, such as the lack of standardization and the cost of gathering new knowledge (Leal-Rodríguez et al., 2014). In addition to these, focusing on the acquisition and assimilation process can also negatively affect the company's financial performance (Hernández-Perlines et al., 2016). Conversely, the emphasis on exploitation and transformation can lead to fast profits, but it can also limit a

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company's ability to introduce new innovations (Zahra and George, 2002). Although, the four capabilities are considered strategic processes that explain how companies can benefit from external knowledge. They can also be used to understand how to manage inbound open innovation in different contexts. There has been a lack of studies on how different phases of the AC process should be managed.

Prior literature has shown that IA can be exercised in many different ways. Lee and Park (2016) agreed with Al-Matari et al. (2014) that IA characteristics include the qualification of the audit administrative, the size of the IA, the experience of the internal auditors and their qualifications. Furthermore, IA has grown over the past decades as corporate governance gains importance in the wake of dramatic scandals and failures. Eulerich et al. (2019) identified that IA functions are an important component of high-quality reporting. Also, Al-Sukker et al. (2018) found that objectivity, competence, and work performance improve IA functions. Additionally, there are previous studies that focused on the quality of IA (e.g., Abbott et al., 2016; Hutchinson and Zain, 2009; Teoh et al., 2017), and those that focused on supporting the quality of internal control system (Baker et al., 2017; Lawson et al., 2017; Paletta and Alimehmeti, 2018).

The design could be modified to provide additional functionality by including IT specialists in the IA depends on the value of IT expertise (Bauer and Estep, 2019). Further improvements are expected to result in an improved understanding of IT, environmental, and advantage or disadvantage to the internal control system (Abbaszadeh et al., 2019).

Additionally, Schmitz and Leoni (2019) recommended to improve the level of technological acceptance and skills essential to accountants and auditors. Furthermore, Hoffman et al. (2018) suggested to explore the specific components of IT capability that impact audits the most. Moreover, several studies examined the relationship between internal controls and IT (e.g., Haislip et al., 2016; Holder et al., 2016; Tadesse and Murthy, 2018). Abdolmohammadi and Boss (2010) said that IA function takes time on IT audit. Finally, Dowling and Leech (2014) suggested to further examine the influence of IT in the audit processes that oppose the study by Mustapha and Lai (2017).

In relation to the AC theory, according to Cohen and Levinthal (1990) the ability to recognize the value of external data and apply this to commercial applications is very important for an organization. AC is explored through four variables, namely acquisition, assimilation, transformation, and exploitation adopted from, e.g., Bjorvatn and Wald (2018); Božič and Dimovski (2019); Dobrzykowski et al. (2015); and Lau and Lo (2015). Kale et al. (2019) suggested to fill a gap in the AC theory by examining the total performance and another kind of performance (e.g., financial data, customer satisfaction, and innovation performance) and using multi-method or multi-measure approaches instead of finding information from a single supply. Also, Vlačić et al. (2019) argued that future research of AC theory should connect it to key interdisciplinary economic business areas. In addition, Khan et al. (2019) viewed that knowledge characteristics can affect potential and realized AC theory. Thus, future papers require to involve another type of knowledge to fill these gaps. Furthermore, according to Aliasghar et al. (2019), future findings should discover how open innovation helps organizations to improve and present new process innovations in different areas. Lastly, Yang and Tsai (2019) argued that future studies should test the role of more possible contextual features or external knowledge requirements, as well as understanding the AC innovation process by examining other possible mediating mechanisms, which will explain AC in

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innovation results. However, the adopted constructs are integrated into a framework that is designed to bring together various techniques and ideas in a practical and coherent manner. The subsequent section explores the relationships and hypotheses between the constructs as depicted in Figure 1.

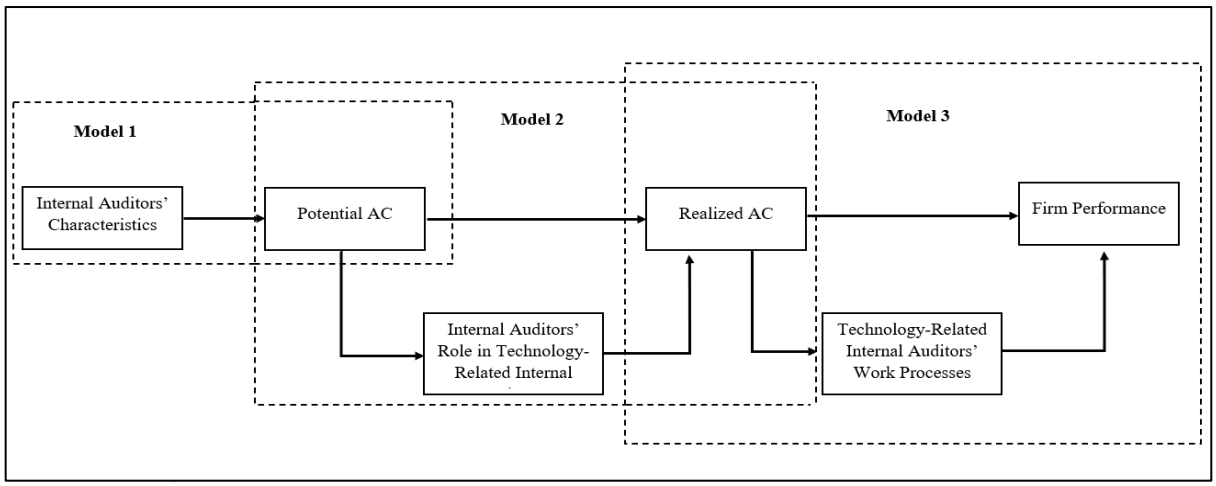

Figure 1: Research Framework

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Hypothesis Development of Conceptual Models for Internal Auditing

Model 1: The Relationship of Internal Auditors' Characteristics and Their Potential Absorptive Capacity

The concept of AC refers to the skills that individuals can use to manage and assimilate knowledge. According to George and Zahra (2002), this type of knowledge acquisition helps firms develop new skills and improve their performance. The individuals who are most likely to benefit from this type of learning are those who are at the crossroads of their firm and the external environment (Cepeda-Carrion et al., 2012). Levinthal and Cohen (1990) explained that an organization's AC depends on the various parts of its structure. This concept can be used to develop organizational structures that are geared toward specific goals and procedures i.e., socialization (Todorova and Durisin, 2007; Zahra and George, 2002) or coordination (Jansen et al., 2005). Individuals who value a new feature due to their cognitive plans and previous facts are more likely to identify the context in which it is embedded and use it for innovation (Schweisfurth and Raasch, 2018). To effectively utilize this information, individuals must have the necessary skills and experience to deal with the communication impedance between their units (Lane et al., 2006; Cohen and Levinthal, 1990; Zahra and George, 2002). According to Schweisfurth and Raasch, (2018) the connection between an organization's technical skills and external communication is carried out through the use of knowledge acquired through experiences. This type of learning can also be used to make available to the organization.

However, The AC of a company requires individuals to develop new ways of acting and absorbing knowledge. First, internal auditors need to learn how to adapt to new practices since they are likely to differ from the ones, they are familiar with. Second, internal auditors need to develop and apply knowledge in order to update their learned practices. The characteristics of an internal auditor can be influenced by the interactions they have with their managers and

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employees. These factors can help internal auditors to develop a better understanding of their potential AC.

In the history of developing internal auditors' characteristics, many variables have been the key factors in measuring the characteristics. Jokipii and Di Meo, (2019) suggested that the expertise of employees is as other characteristics. Also, it separates the characteristics into categories to develop its activities: first, outside the firm, e.g., professionalism, education and certifications; second, inside the firm, e.g., number of years, management training, and the facility of internal auditors. Additionally, Jokipii and Di Meo, (2019) argued that the autonomy of internal auditors is a very important characteristic; internal auditors would request to avoid anything that violates its independence. The Institute of Internal Auditors (IIA) supports in making IA activities independent, and internal auditors in aiming to perform their profession independently. An internal auditor's objective is to be less influenced by the actions of leaders and certain missions in creating an audit plan (Lin et al., 2011). This will allow them to identify and report potential risks related to internal control. In order to improve their performance, they must remain impartial (Norman et al., 2010).

In this study, the characteristics of internal auditors are based on the assumption that prior knowledge about various technical skills and professionals interacts with and crosses-contaminates with what they are trying to assimilate. Learning new skills requires a lot of knowledge. In this case, it's not always possible to assume that everything an internal auditor knows is perfect. They may need to unlearn certain habits or adopt new routines. This study argues that in order to acquire new knowledge, an internal auditor should have characteristics that are not related to their current knowledge. Due to the increasing number of tasks and activities that the internal auditor's department is required to perform, they need a context that allows them to remove the oldest knowledge and replace it with new ones. According to Jiménez-Castillo and Snchez-Pérez, (2013) workers tend to unlearn and relearn as they get older. As workers develop new skills, they become more comfortable with the new ways of doing things. This can lead to the emergence of questions about the information they own and the innovation approach they are using. Thus, this leads to the following hypothesis:

H1: Internal auditors' characteristics have a positive influence on their potential absorptive capacity.

Model 2: The Relationship of Internal Auditors' Role in Technology-Related Internal Control System in Their Potential and Realized Absorptive Capacity

The goal of this study is to analyze the relationship between realized and potential AC in the Jordanian IA context. It explores how these two dimensions can influence the development of new types of innovations in IA. The concept of AC theory is a set of capabilities that can be used to create new commercial outputs and knowledge. The first two dimensions of an organization's potential of internal auditor capabilities are assimilation and acquisition. The other two are transformation and exploitation. These are the capabilities that an organization uses to transform and exploit its external knowledge (Zahra and George, 2002). In other words, potential AC refers to the knowledge that an internal auditor could acquire and assimilate, while realized AC is the knowledge that an internal auditor has utilized to transform and exploit its knowledge. The concept of potential and realized AC components can be regarded as second-order constructs (Camisón and Forés, 2010). For instance, in studies on innovation, the AC lens has been used to explain various factors such as supply chain management (Gölgeci and

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Kuivalainen, 2020) and strategic alliance formation (Siachou et al., 2021). In addition, organizations benefit from organizational theory, as it highlights the antecedents, conditions, and reasons under which an organization's potential capabilities can create value (Lane et al., 2006; Limaj et al., 2016; Raymond et al., 2016). In particular, research has shown that the relationship between realized and potential AC can be empirically explored (Lane et al., 2006). This can help us understand the nature of AC theory in an IA context.

The concept of the AC model proposed by George and Zahra (2002) states that potential AC influences the realized AC. This study aims to explore how each component of the model affects the different innovations of internal auditors. The goal of this study is to establish a deeper understanding of how external knowledge can be acquired and utilized to improve the knowledge base of internal auditors. Several factors have been identified as possible determinants of an organization's potential AC. These include the availability of cross-functional interfaces, job rotation, socialization capabilities, and exposure to diverse sources of knowledge (Jansen et al., 2005; Zahra and George, 2002). In order to maximize the value of their acquired knowledge, organizations make use of both their complementary and acquired capabilities (Raymond et al., 2016). Since potential AC sets the stage for the development of internal auditors' knowledge base, the next step is to leverage that knowledge by implementing it in a realized manner. Levinthal and Cohen (1990) noted that the cumulative character of an organization's potential AC (the connection between its prior potential AC and its current state) is important. This concept suggests that the distribution of potential AC across the organization's various internal departments can help improve its effectiveness. It has been suggested that internal auditors must have synthesized and acquired external knowledge before they can exploit it. This suggests that the potential AC of an organization precedes the realized AC.

Furthermore, the process of acquiring and assimilating external knowledge has to go through several cycles before it can be commercially applied to generate business value. As internal auditors start to acquire new insights, they may also develop relevant insights that they can utilize during the exploitation phase. The earlier forms of knowledge sourcing contribute to the later forms of knowledge acquisition (Raymond et al., 2016). They should reinforce each other and be able to provide a competitive advantage (Limaj and Bernroider, 2019). The potential AC is related to the realized AC of a focal firm for developing a competitive advantage (Lane et al., 2006; Leal-Rodríguez, et al., 2014; Volberda et al., 2010). In addition, to acquiring external knowledge, internal auditors also have to develop and implement strategies and procedures that will help them become innovative. This can be done through the exploitation of the knowledge they have acquired. For instance, they can use the knowledge they have gained from their partners to develop new types of innovations (Cohen and Levinthal, 1990; Zahra and George, 2002). Hence, the increased potential of internal auditors to acquire new knowledge will lead to the development of their realized AC. This is because they have to develop effective knowledge sharing routines in order to take advantage of the external knowledge they can gather. The more ideas and interpretations that come from new knowledge, the more likely the internal auditors are to be proactive in exploiting the opportunities that are presented to them. Thus, the potential AC can also be a motivating factor for internal auditors to increase their realized AC. Thus, this leads to the following hypothesis:

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H2: The potential absorptive capacity of internal auditors is positively associated with their realized absorptive capacity.

New knowledge should be kept up to date within the organization and accessible to those involved in its exploitation. Otherwise, it may be lost. According to Cepeda-Carrion et al., (2012) the increasing competition and mergers in the industry have created a risk that knowledge might be lost due to the turnover of staff members. One of the most effective ways to avoid this issue is by implementing technological capabilities that can help preserve and use your valuable knowledge (Gold et al., 2001). This is because having the right knowledge processing practices can help companies maintain their competitive advantage and improve their long-term competitiveness (Wu et al., 2019).

This study argues that an internal auditor's role technology-related internal control system is an intermediate step that can be taken to improve the efficiency of the system. It can also be regarded as a process that allows for the capture of new knowledge. Accroding to Rae et al., (2017) that this process can be used to classify and provide access to the knowledge that has been learned and successfully applied. In addition, the scope of an organization's internal control system is significantly influenced by the development and implementation of technology (Fadzil et al., 2005). This system is a vital component of an organization's operations, and effective technology can help ensure that its goals and objectives are met (Zarei et al., 2020). An internal control system is a framework that ensures that an organization follows proper regulations and policies. It also provides senior management with the necessary assurance that the company's goals and objectives are being achieved (Badawi et al., 2003). On the other hand, an internal auditors' role in technology-related internal control system is designed to provide managers with the necessary tools and procedures to achieve their goals. The COSO (2013) defines internal control as "a process, affected by an entity’s board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories: effectiveness and efficiency of operations, reliability of financial reporting and compliance with applicable laws and regulations." In addition, the technology-related internal control system are important to ensure that the procedures are carried out properly (Alfraih, 2016). Due to the increasing scope of the internal auditor's duties and activities, it is now more important that carries out risk assessment. This process is designed to provide an assurance that the organization's internal controls are working properly. In addition, to being able to identify the strengths and weaknesses of the organization's internal control system, the internal auditor's knowledge of management's strategies and business processes can also help them determine the potential risks that the organization faces (Abuazza et al., 2015).

The IA can help executives and board of directors identify and monitor the risks associated with their internal control systems (Abuazza et al., 2015). It can also help them develop effective strategies to improve their systems' performance (Rittenberg and Anderson, 2006). The IA provides guidance at the process and control levels, as well as the development of a customized assurance program. Furthermore, the Institute of Internal Auditors (IIA) supports the IA's technology activities by developing practice guides that address specific aspects of IT risk and control assessment.

Although internal auditors can help executives and boards of directors with their duties related to the implementation of technology-related internal control systems, they need to be thoroughly investigated. Therefore, instead of focusing on one area, this study aims to explore

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the various factors that influence the development and maintenance of a technology-related internal control system. It also explores the ways in which the IA can support this system. Due to the increasing importance of technology in today's business environment, the role of the internal auditor has evolved from being primarily responsible for financial control to becoming a strategic part of the organization. This new role requires a deeper understanding of the various aspects of internal control systems.

Furthermore, an internal auditor is a vital part of any organization's operations, as they are responsible for identifying and preventing fraud. They can also play a variety of roles in monitoring and detecting irregularities in the organization. These roles can be assigned by the audit committee, the management, or the board. Through a combination of consulting and certainty, internal auditors can help organizations succeed. This is done by identifying areas of improvement and ensuring that the systems and processes are working properly. The managers and governors who are responsible for running an organization are also involved in the process. After assessing the systems and processes, the internal auditors provide advisory services to help improve them.

In this respect, independent assessment of IA is a process that aims to provide an objective assessment of the controls and risk management activities of an organization. It also contributes to the development of the organization's accountability framework. Although internal control and IA should be separately assessed, they should be considered on a complimentary basis. As is understood from the assessments, the main principle of the institutionalization of an organization depends on technology-related internal control system. Through IA, an organization can assess the effectiveness of its internal control system. This type of system is designed to help executives and entities carry out their business activities efficiently and effectively. Its efficiency and quality are then evaluated by the organization's internal auditors. They are responsible for providing reports and recommendations to the management on the appropriate quality and efficiency of the system. An organization's internal control system is a vital component that can help prevent fraud and error. It also ensures that the company's efficiency and profitability are maintained.

If the above argument is correct, the development of an organization's AC system depends on the acquisition of new knowledge and its integration with existing knowledge. This strategy aims to continuously improve the company's technology assets. In addition to the acquisition of new knowledge, this approach also emphasizes the importance of maintaining a continuous knowledge stock. While the internal auditors are responsible for providing the latest techniques and knowledge in the technology aspects of an organization's internal control system, they are also required to maintain and codify the knowledge stocks that are part of this system. This is a source of inertia that can prevent an organization from developing effective learning paths. For instance, if managers have previously invested in knowledge, they may think that it is easier to develop new strategies and initiatives that use current technologies rather than try to acquire new knowledge. An organization's internal auditor should also be able to distribute the new knowledge to all employees involved in the development of the company's technology initiatives, as well as store and codify the information for future use. internal auditor should additionally continuously renew the previous experience with the acquired knowledge. Consequently, the internal auditors' role in technology-related internal control system acts as a mediator in the relationship between potential AC and realized AC, since it enables new

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knowledge to be combined with past knowledge and used in the innovation process. Thus, this leads to the following hypothesis:

H3: There is a mediating effect of internal auditors' role in technology-related internal control system on the relationship in their potential and realized absorptive capacity.

Model 3: The Relationship of Technology-Related Internal Auditors' Work Processes in Their Realized Absorptive Capacity and Firm Performance

One of the most critical factors that a firm must consider when it comes to developing its competitive advantage is the ability to combine its current knowledge with that of its external sources. This can be done through the exploitation of various capabilities, such as real-time knowledge (Rosenkopf and Nerkar, 2001). According to Vieira et al., (2015), the use of modernized AC can help firms re-evaluate their existing knowledge and let go of outdated ones. According to Johl et al., (2013), firms that can effectively utilize external knowledge should be able to improve their performance. Also, they noted that integrating knowledge with existing stocks can help improve a company's performance. Through process innovation, firms can improve their performance by developing and implementing effective exploitation and transformation capabilities (Zahra and George, 2002). These capabilities can help them achieve their goals by reducing their costs and improving their new development (Zahra and George, 2002). According to previous scholars that realized AC can the ability to develop new ideas and improve the efficiency of a firm can be achieved through the acquisition of new knowledge. This can also be done through the integration of the knowledge with the firm's existing resources (Bolívar-Ramos et al., 2013). For instance, by acquiring new knowledge from external sources, a firm can improve its performance by developing new strategies and implementing new innovations (Kotabe et al, 2011).

New services are important for firms as they face increasing competition and technological change. The profitability of these offerings can help them survive the changes. According to Tzokas et al., (2015) technological change and intense competition can affect the survival of a company. Although a firm's financial advantage can be guaranteed, it is not always possible to predict how many new services it can introduce may or may not be the same as high returns on investments (Grant et al., 2008). For instance, the number of new services that it can launch may not be the same as the high returns that it can get from its investments. On the other hand, firms that take the time to develop their capabilities are more likely to reap financial benefits from their efforts (Gomez and Vargas, 2009). According to studies by Lane, Zahra, and George, (2002) the relationship between realized AC and financial performance is strong. For instance, Kostopoulos et al. (2010) revealed that the presence of high levels of realized AC knowledge can help improve financial performance. By effectively deploying and redefining the firm's knowledge base, it can be possible to improve operational capabilities and increase its profitability. In this study, the level of internal auditor's awareness realized AC is a vital component of firm performance. It can help a firm identify areas of its operations where it can improve its profitability and increase its market share. This study also analysed the various external sources of knowledge that realized AC of internal auditors can use to improve their profitability. Thus, this leads to the following hypothesis:

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H. 4: The realized absorptive capacity of internal auditors is positively associated with firm performance.

Realized AC affects the industry ability to transform and exploit external technologies. After external knowledge is transferred into the company and assimilated through potential AC, the technologies are then stored for future events via transformation capability. In a correct time, the transformed knowledge is leveraged through exploitation capability (Daspit et al., 2019). Through realized AC, an organization can create innovation values by taking advantage of new technologies. This process can help them improve their IT processes and create a competitive advantage. (Zahra and George, 2002). Furthermore, once the external technologies are acquired and assimilated through potential AC, the data allow components to be proposed in developing an efficient implementation of new technologies (Daspit et al., 2019).

The technology-related internal auditors' work processes use function in most businesses to support internal auditors with a promise that its control responsibilities over data assets are already met. However, these technology support the organizations with a supposed competitive advantage by developing efficiency and improving audit processes and effective control (Carson and Dowling, 2012). In the developmental history of IA processes, they have been thought as a key factor, i.e., plans, standards, reports and technological documents (Bozkus Kahyaoglu and Caliyurt, 2018; Havelka and Merhout, 2013; Pongpattrachai et al., 2014), based on the variables of technology-related internal auditors' work processes and their realized AC for firm performance improvement.

Technology-related internal auditors' work processes can also influence the overall firm performance. When technology-related internal auditors' work processes are working effectively, they can help to identify and mitigate risks, reduce the likelihood of fraud, and promote a strong culture of control and risk management. Having a mature function of technology-related internal auditors' work processes can also help firms to improve their financial reporting processes and enhance their financial reporting quality. Furthermore, firms with effective technology-related internal auditors' work processes tend to show better performance than those that do not.

In this study, realized AC and technology-related internal auditors' work processes can be used to support various dimensions of firm performance. Realized AC has the ability to transform technology-related internal auditors' work processes and can improve firm performance. The increased use of technology in the processes has made it possible to find fraud quickly. Furthermore, the organization's realized AC is the ability to process and absorb information or knowledge in an effective manner. This is dependent on a number of factors, including an organization's existing knowledge base, existing people, existing processes, and available technology. In this way, realized AC is one of the most critical components of learning and knowledge. When firms have high levels of realized AC, they are able to process and assimilate new information and insights quickly and efficiently. They are also able to translate these insights into actions quickly and effectively. In addition, firms with high levels of realized AC are better able to leverage technology and data to drive innovation. A firm's realized AC is also a critical component of firm performance. With high level of realized AC, firms are able to adapt quickly to a changing business environment, respond quickly to customer needs, and innovate quickly. By contrast, firms with low levels of realized AC tend to struggle in these areas.

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IT becomes a critical input for the achievement of objectives and innovations of firm performance. It can be supposed that the AC is inevitably tied to the success of firm performance. IA departments should be able to transform their strategies and support technology changes. The technology-related internal auditors' work processes for the new technology can organize all procedures. Also, the decision quality of technology-related internal auditors' work processes is enhanced to assist in audit plan development and organization of IA reporting. Moreover, technology-related internal auditors' work processes improve firm performance to detect and prevent fraud by providing a consistent plan for all processes in a company. So, it includes all procedures starting with fieldwork planning to reporting. Additionally, technology is used in developing IA working papers and selecting samples. Thus, internal auditors will be motivated to apply technology because it aims to shorten the working time and develop efficiency, thereby contributing to the best of firm performance. Thus, this leads to the following hypothesis:

H. 5: There is a mediating effect of technology-related internal auditors' work processes on the relationship in their realized absorptive capacity and firm performance.

Methodology

In this paper, a theoretical perspective and qualitative methodology have been adopted. In other words, we examined whether existing theories and previous internal auditing literature convey the heterogeneity and complexity of internal auditing and absorptive capacity theory in the field (Synder, 2019). We kept in mind that fundamental concepts and relationships may require re-conceptualization, refinement, or elaboration in order to produce a more specific and structured research model (Keating, 1995). The absorptive capacity theory was established by Zahra and George (2002) and applied in this study to develop the research framework (Figure 1). In addition to that, the research framework was utilised as the foundation for the formulation of five hypotheses, each of which would be subjected to near future empirical investigation.

Conclusion

The goal of this study is to provide a theoretical and behavioural framework in understanding the interaction between the IA and the AC theory. This type of research has not been addressed in previous studies, and it was not able to provide a comprehensive analysis of how the AC theory operates in practice.

In the past, Zahra and Gorge (2002) have utilised the theory extensively to investigate the interactions between IT and AC. Several authors in various disciplines have employed these techniques. Datta (2012), Cepeda-Carrion et al. (2012), Ali et al. (2013), Jiménez-Castillo and Sánchez-Pérez (2013), Bolvar-Ramos et al. (2013), Cooper and Molla (2014), Zou et al. (2016), Raymond et al. (2016), Heiden et al. (2016), and Saemundsson and Candi (2017) are a few examples. The integration of the AC theory with the IA framework provides a deeper understanding of the numerous technologically-related behaviours and processes. This strategy is likely to contribute to the growth of the proposed theory and research framework. On the basis of the research framework, five hypotheses were developed and will be empirically tested. Additionally, the integrated research framework offers a theoretical lens to understand the IT ability to strengthen IA in three stages, namely internal auditors' characteristics, internal auditors' role in technology-related internal control system, and technology-related internal auditors' work processes; whereas there are no previous studies including theses variables with potential AC (acquisition and assimilation) and realized AC (transformation and exploitation).

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The goal of this study is to introduce a new vision into the field of IA by developing a theoretical framework that will allow us to better understand the various aspects of AC. In addition, it aims to enhance the capabilities of the internal auditor by developing a new approach to manage technology. The study conducted by Zahra and George, (2002) sheds new light on the internal auditors' characteristics, internal auditors' role in technology-related internal control system, and technology-related internal auditors' work processes. It also argues that this technology can be used to enable the organization to change and evolve. These capabilities allow internal auditors to adapt to the changes brought about by the changes of technology in the business environment.

This approach is likely to maintain a stable development of the AC theory in the IA context. First, it will introduce the characteristics of internal auditors and their role in the development of the theory. It will involve the environment's diversity and the multiple sources of potential AC. An internal auditor's technology search is a process that helps them identify areas of their expertise that they can improve in order to acquire more knowledge. This process can be carried out through the development of their future acquisition capabilities. In addition to being able to identify areas of their past success, learning by doing can also help them develop new routines that will influence their future technology search. The path to a firm's potential AC is determined by the experiences of its internal auditors. Over time, these experiences can reflect the failures and successes of the organization's internal auditor. They also determine the appropriate resources and capabilities to acquire and assimilate new technology.

Second, the contribution of this study is to provide a comprehensive view of the various aspects of AC theory in the IA context. It is a step toward developing a more accurate definition of AC variables that can be used to improve the efficiency of an organization. In addition to being able to identify trends in their environment, this study also shows that potential ACs are more likely to adopt a continuous approach to improving their IT stock by continuously monitoring and analyzing their external environment. The development of a potential AC helps internal auditors to monitor changes in their industries and deploy necessary capabilities, such as IT competencies and controlling. It also realized AC helps in the renewal of the IT skills of internal auditors, who are needed to compete in the changing controls environment. An organization's internal auditor should be flexible in order to capitalize on emerging opportunities. The components of an AC can help them improve their capabilities and increase their effectiveness, which can result in long-term economic benefits. This is because the combined resources and capabilities of an internal auditor can help them perform their duties more effectively.

Third, internal auditors' role in technology-related internal control system and AC theory is examined. In order to promote comprehension and mutual understanding, the members of the firm should share information related to the exploitation of IT. Firms do not always foster the effective sharing or integration of IT. Internal auditors' role in internal control system contributes to IT assimilation and facilitates the distribution of information within the firm as well as gathering interpretations and identifying trends. The mediation of internal auditors' role in internal control system is purely defensive in nature and contributes to realized AC besides possibly reinforcing it. The internal auditors' role in technology-related internal control system should be more focused on developing their own innovation capabilities instead of relying on information disclosure from other firms. This will help improve the relationship between the potential and realized AC. This is important because, once an organization has

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acquired and assimilates new technology, it needs a system that can better manage its exploitation and transfer of new technology.

Forth, the contribution of this study is to provide a new vision of the internal audit framework in Jordan by analyzing the various of realized AC factors that affect the performance of firms. There are no studies that have included the realized AC variables in the analysis of the Jordanian firms based on the definition by Zahra and George (2002). The study aims to analyze the various resources that internal auditors have to improve their performance. One of these is their ability to effectively manage and exploit technology. This is a critical resource that can be used to enhance the firm's performance. The study also explores the effects of the realized AC of internal auditors. This is because technology can help them improve their efficiency and increase their reports' effectiveness.

Fifth, the concept of AC is a framework that can be used to develop and implement a strategy that aims to acquire, assimilate, transform, and exploit technology. the technology-related internal auditors' work process also improves by which IT transformation occurs when managers combine two incongruous frames of reference (such as IT and internal audit) to arrive at new IT audit that can be exploited for generating profits. Thus, having the proper technology-related internal auditor's work process is very important to ensure that the firm's technology is used effectively and efficiently. This process can help improve the firm's performance and enhance its competitive advantage. In addition to being able to access the company's technology base, internal auditors can also take advantage of the system's various features to improve the organization's performance. Therefore, to successfully implement complex and sophisticated technology into the processes, an internal auditor must have the necessary skills and knowledge to perform their duties. This individual should also be familiar with the various procedures and capabilities of the organization.

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