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Managing Informal Learning in the Auditing Profession: How Auditors Develop Proficiency

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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MA, University of Hartford, 2004

BS, University of Connecticut, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The auditing environment is in a period of innovation, and auditors need to maintain their financial reporting commitment to financial statement stakeholders. The purpose of this quantitative cross-sectional survey study was to examine the impact of auditors' perceptions of informal workplace learning contexts on the external auditing profession using a perceived organizational support lens. Organization support theory includes four aspects used to explore informal workplace learning: management support, peer support, supportive organizational culture, and access to work resources. These aspects were used to examine the impact of informal learning on auditors' engagement and performance. Multiple linear regression was used to examine data from a survey of 103 auditing professionals in Connecticut. Data showed that access to work resources, including time and technology, were significant in each model in relation to impact and its subcomponents engagement and performance. This indicated that auditors' access to the resources necessary to stay current has a positive impact in the auditing profession. This study fills the gap in the existing literature on the impact of informal learning on the auditing profession where there is continual change and informal learning is heavily relied upon to diffuse knowledge and skills in a highly knowledge-based environment. Better-qualified auditors can help businesses keep up with ever-changing societal expectations. The accounting profession is in a period of innovation that requires professionals of all levels to adapt to keep pace with the quickly changing globalized organization.

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Dedication

This dissertation is dedication to my husband, kids, and parents. Each of who has demonstrated in their own unique way what is means to stand by someone, persevere and never give up. Also to my father, life is short go for it.

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I want to acknowledge the love and enduring support of my husband, you make me a better person. There is no other person I would want to share the roller coaster of life with then you. Also the encouragement and understanding of my kids, I will forever hear “you can do it mommy”. You are the reason to be a better me. Also to my mother who has always been there you are a true inspiration. I wish dad could be here too. You all have made so many sacrifices to get me to this point. Words cannot express my love for you all.

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Chapter 1: Introduction to the Study

After the stock market crash of 1929, the financial irregularities of the early 2000s, and again after the financial crisis of 2008, financial statement stakeholders began demanding more transparency in financial reporting and the auditing profession. This was evidenced by increased signs of a loss of confidence in the accounting profession and tighter regulations. In today's globalized organization, employees' workplace learning is central to the organization's competitive advantage. Workplace learning is particularly vital for accountants who are responsible for the organizations financial statements. For accountants, workplace learning helps minimize auditing inefficiencies that have a direct consequence for financial statement stakeholders. The specific problem I addressed in this study is that the impact of informal workplace learning is not well understood in the accounting profession. This dissertation advances the existing body of knowledge on the impact of informal workplace learning in the accounting profession, a profession organizationally designed for informal learning.

In this study, I addressed informal workplace learning through a organizational support theoretical lens to identify relationships between the four aspects of informal learning identified by Maringka (2013): management support, peer support, supportive organizational culture, and access to work resources. Specifically, I studied the impact of informal workplace learning in the public accounting profession by looking at a population of external financial statement auditors. This research adds to the accounting literature and is necessary to help restore financial statement stakeholders faith in the auditing profession's role in accurate financial reporting and the financial statement audit

process. In this chapter, I outlines the background of this study including the problem statement, purpose statement, and research questions. In addition, the chapter includes a detailed discussion of the nature of the study, key definitions, and discussion of assumptions, limitations, and the study's significance.

Background of the Study

In the accounting literature, researchers have studied external auditors in many ways. Auditors attest to the reliability of financial statements. The auditing profession is in a time of rapid transformation fueled by regulatory change, technology adoption, and social expectations (Center for Audit Quality, 2015; Deloitte 2015a; Deloitte, 2015b; Ernst &Young, 2015; Forbes Insights, 2015; PricewaterhouseCoopers, 2015a; PricewaterhouseCoopers, 2015b). Individuals are not entering into the profession ready for this accelerated on the job learning, and newer professionals are not yet trained for the changing environment. However, they adapt quickly to the changing professional landscape. I thus sought to understand the impact of informal learning opportunities in the auditing profession as measured by performance and engagement.

One key element of the globalized economy is ever-changing technology. To stay current with today's organizational demands, professionals need be motivated to continually further their own skill sets. Changes in the workplace are rapid and continual, which creates challenges for traditional, formal learning (Ellinger, 2005; Inanc, Zhou, Gallie, Felstead, & Green, 2015). Formal training cannot keep up as it becomes nearly impossible to follow the need for learning and development activities (Eraut, 2004). The auditing profession values its people as its greatest asset (Center for Audit

Quality, 2015). Each of the big four accounting firms agree the accounting and auditing profession is in a period of innovation that requires professionals of all levels to adopt new skills in response to continuous changes. Formal training does not adapt as quickly to job responsibility shifts in the profession. Auditing professionals are on the job in the field of a multitude of distinct organizations, so as organizations evolve, the auditing profession is expected to keep current. Organizations are looking for adaptable people who can keep pace with the quickly changing world and organization (PricewaterhouseCoopers, 2015a).

Public Accounting Workplace

Rapid technological and regulatory changes in the accounting profession over the past decade have changed the public accounting environment tremendously. From the collapse of Arthur Anderson and implementation of Sarbanes-Oxley in 2002, to entering an environment where 100% audit testing of certain assertions is possible because of changes in information technology, the accounting profession has become more complex. Each of the big four firms have posted position papers on the rapidly changing professional climate (Deloitte, 2015a; Deloitte, 2015b; Ernst and Young, 2015; Forbes Insights, 2015; PricewaterhouseCoopers, 2015a; PricewaterhouseCoopers, 2015b). In these changing economic and organizational environments, employees know they need to be adaptable to changes. Informal learning has always been at the heart of the public accounting organization known for its pyramid structure. The pyramid structure is set up for learning from those with just a few years more experience through direct and constant

feedback in the field, a better understanding of informal learning's perceived impact will contribute to the emerging literature in this category.

Social Change

Technology has standardized, eliminated, and deskilled many jobs, but also has created new jobs that require judgment and creativity, bringing workers back to the art of learning from experience (Marsick &Watkins, 2015). This type of learning dates back to the apprenticeship model, where the accounting practice originated. Advanced education was still new during the industrial revolution, and practical experience in the accounting profession could be substituted for educational requirements. The apprenticeship model is still effective today (Chan, 2013; Tepper & Holt, 2015) and has been studied in regards to professional performance improvement (Caliner, 2013). Implementing effective informal learning strategies with public accounting auditors could increase the impact of operating efficiencies to better meet financial statement stakeholders changing financial reporting expectations.

After the stock market crash of 1929, the financial irregularities of the early 2000s, and again after the financial crisis of 2008 there were increased signs of a loss of confidence in the accounting profession leading to changes in professional expectations. Financial statement stakeholders began demanding more transparency in financial reporting and the auditing profession (Association of Certified Fraud Examiners, 2016). Skills professionals' previous education no longer fits demands in the current market, job expectations are rapidly changing, and during this process professionals are expected to continually update their skills. Casey (2013) stressed that too much focus on technology

adoption in lifelong learning can negatively affect employee relations. Accounting professionals shows a strong self-motivation to learn and are typically driven by a commitment to best represent the profession and stay current on professional expectations (Marsick & Wakins, 2015). They are proactive in use of resources to supplement their learning to best meet financial statement stakeholders evolving expectations for accurate and reliable financial reporting.

Problem Statement

The accounting profession is in a time of rapid change. Skills professionals' previous education no longer fits the demands in the current job market (Center for Audit Quality, 2015). In 2012, $164.2 billion was spent by United States organizations on formal learning, but estimates show that formal learning accounts for approximately 25% of learning in organizations (Noe, Clarke, & Klein, 2014). In this study, the general problem I addressed is that the auditing environment is in a period of innovation and needs to maintain its financial reporting commitment to financial statement stakeholders. The specific problem is that the perceived impact of informal learning on the external auditing profession is not well understood in the accounting profession. In this study I addressed the literature gap regarding the impact of learning opportunities in an audit setting where there is rapid change and informal learning is heavily relied on to diffuse knowledge and skills. I used multiple linear regression to look at the relationships between the four aspects of informal learning and the impact of each on informal workplace learning using data from a survey of audit professionals.

Purpose of the Study

The purpose of this quantitative survey study was to examine the impact of auditors' perceptions of informal workplace learning contexts on the external auditing profession using a perceived organizational support theoretical lens. Specifically, I examined the four aspects of informal workplace learning identified by Maringka (2013): management support, peer support, supportive organizational culture, and access to work resources. Individuals' behaviors are linked to the management field in the human resource development literature. Perceived organizational support refers to the "predictive relationship between employees and perceptions and behavioral outcomes" (Maringka, 2013, p. 6). This study is new in the accounting literature. The accounting profession is known to be a rich learning environment (Watkins & Cervero, 2000) and structurally organized for on-the-job learning (Earley, 2001). Implementing effective informal learning strategies with public accounting auditors could increase the impact of operating efficiencies to better meet financial statement stakeholders changing financial reporting expectations. To address this, I replicated and extended the work of Maringka (2013) to the audit profession using a self-reported survey organized by four aspects of informal learning, which served as the independent variables. The dependent variable in this study was the impact on informal learning.

Research Question(s) and Hypotheses

In this quantitative study, I examined the perceived impact of workplace informal learning on external audit professionals. Data was obtained from an email survey of

auditing professionals' self-reported perceived workplace informal learning attributes. I develop the following research questions and hypotheses:

Research Question 1 (RQ1): What is the relationship between external auditors' perceptions of informal learning work contexts management support, peer support, supportive organizational culture, and access to work resources and organizational impact as measured by engagement?

$H_0$1: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with engagement.

H_A1: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with engagement.

The dependent variable was engagement and the four independent variables were the mean scores on responses from the ILWC survey for the four informal learning work contexts (management support, peer support, supportive organizational culture, and access to work resources). The measures from both independent and dependent variables were mean scores from various subsets of Likert scale questions on the survey instrument.

Research Question 2 (RQ2): What is the relationship between external auditors' perceptions of informal learning work contexts (management support, peer support, supportive organizational culture, and access to work resources) and organizational impact as measured by performance?

$H_0$2: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with performance.

H_A2: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with performance.

The independent variables were consistent with those from RQ1 above. I used this research question to look at the relationship between the same means for the four informal learning work context independent variables management support, peer support, supportive organizational culture, and access to work resources, on the dependent variable impact of informal learning on performance. The impact of informal learning on the performance variable was measured using the mean scores from various subsets of Likert-scale questions on the survey instrument.

Research Question 3 (RQ3): What is the relationship between external auditors' perceptions of informal learning work contexts (management support, peer support, supportive organizational culture, and access to work resources) and organizational impact as measured by performance and engagement combined?

$H_0$3: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources to the impact of informal learning.

H_A 3: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources to the impact of informal learning.

The independent variables were consistent with those from RQ1 and RQ2 above. I used this research question to look at the relationship between the same means for the four informal learning work context independent variables (management support, peer support, supportive organizational culture, and access to work resources) on the dependent variable impact of informal learning. The impact of informal learning variable was measured using the combined mean responses to the 10 survey question responses on impact of informal learning on engagement and performance combined, to represent the impact of informal learning. I used multiple regression to test Hypothesis 1 through 3.

Research Question 4 (RQ4): What is the impact of demographic variables gender, experience, and firm type on auditors' workplace informal learning?

$H_0$4: There is not a significant relationship between gender, experience, and firm type on the auditors' informal workplace learning.

$H_1$4: There is a significant relationship between gender, experience, firm type on the auditors' informal workplace learning.

Demographic variables of interest in RQ4 included the dichotomous variable male/female, experience measured in years worked in the profession (a continuous variable), and firm type (a dichotomous variable based on non-Big Four/Big Four firm type as referenced in both the literature and in the profession. I coded each of these variables using participant survey responses. I used prior literature to support variable

constructs. I measured the impact of informal learning against the combined mean responses to the 10 survey question responses impact of informal learning on engagement and performance combined, to represent the impact of informal learning variable consistent with RQ3. I used multiple regression to test Hypothesis 4.

Theoretical Foundation

I developed the theoretical framework of this study using human resource management literature on informal learning and perceived organizational support. Perceived organizational support is how employees perceive the organization to positively or negatively value and support their individual contributions to the greater organizational success/goals. Organizational support theory was developed by Eisenberger, Huntington, Hutchison, and Sowa (1986), who held that employees prescribe human-like characteristics to their employer organization and perceive the extent to which the organization positively or negatively values their contributions (Eisenberger, Huntington, Hutchison, and Sowa, 1986).

Informal learning is prompted at the individual level by a desire to learn. The theory and definition of informal learning are varied in the literature, but each of the definitions shares some common themes. Key theorists in the informal literature include Cseh, Watkins, and Marskic (1999), Eraut (2004), and Argyris (1999). Informal learning is a balance between action and reflection, while formal learning is based more on reflection than action. Informal learning can be studied from antecedents including fairness, supervisor support, and rewards/job conditions, or consequences including organizational commitment, withdrawal behavior, the desire to remain, absenteeism,

employee strain, performance, and others (Eisenberger et al., 1986). There is a non-linear relationship between perceived organizational support and performance (Eisenberger et al., 1986). Perceived organizational support highlights the role of employer commitment in exchanges with the employee. Employees' increased sense of contributing positively to organizational goals is linked to increased identification with the organization and thus improved performance (Eisenberger et al., 1986). The training efforts and resources spent on employee informal learning and support of employee informal learning growth can be viewed from a perceived organizational support theoretical lens. In Chapter 2, I discuss organizational support in more detail.

Nature of the Study

The design of this study was a quantitative multiple regression analysis of the perceived impact of informal learning on the external auditing profession. The emergent nature of organizational learning, including informal learning, in the literature and recent developments of quantitative instruments to measure informal learning have prepared the way for a closer look at the "micro-level mechanisms that generate informal learning" (Za, Spagnoletti, & North-Samardzic, 2014, p. 1024). Previously, informal learning was hard to measure in an organizational context, but recent researchers have developed a variety of instruments to identify and measure conditions and outcomes for informal learning while taking into account the complex nature of the learning.

I used a survey to collect demographic information along with information of self-perceived impact of professional learning opportunities taken. The original sampling plan comprised auditors who are also members of the CTCPA. This population includes

professionals from various types of firms with various years of experience, but I originally planned to focus on those with less than 10 years of public accounting professional work experience. By including student members, this could include professionals working in the profession but not yet licensed due to not having completed the CPA exam or currently or are working toward 150 credits. Approval was to be attempted once the proposed study was approved. A pilot study was conducted with a small population to ensure question clarity, technology capability, and time to complete the task.

Definitions

Access to work resources: Employees' perceived right to use resources such as time and technology in the workplace (Maringka, 2013).

Impact of informal learning activities: Employees' measured perception of the influence of participation in informal learning activities at work (Maringka, 2013).

Informal workplace learning: Learner-focused experiential learning in an organizational context that balances reflection and action (Cseh, Watkins, & Marsick, 1999; Marskick & Watkins, 2015; Eraut, 2004; Schön, 1983; and Argyris 1999).

Management support: Employees' perceived support by those in higher organizational positions to further themselves professionally (Maringka, 2013).

Peer support: Employees' perceived support by those at the same organizational position to further themselves professionally (Maringka, 2013).

Perceived organizational support: How employees individually view their employer organization positively or negatively values and support their individual

contributions to the greater organizational success/goals (Eisenberger et al., 1986).

Supportive organizational culture: Employees' perceived support by their employer organization to further themselves professionally (Maringka, 2013).

Assumptions

In this study, I assumed that professional auditors practicing in the public auditing profession participate in informal learning activities that impact on the job learning for continued improvement. Past researchers have identified the profession as structurally organized for informal learning (Watkins & Cervero, 2000; Earley, 2001; Westermann, Bedard, & Earley, 2015) and as changing at a pace that cannot keep current with formal continuing education requirements (Center for Audit Quality, 2015; Deloitte, 2015a; Ernst and Young, 2015; Forbes Insights, 2015; PricewaterhouseCoopers, 2015a). I assumed that changing businesses needs are met by public auditors under contract to provide accurate financial reporting, and that inaccurate financial reporting harms financial statement stakeholders through economic losses. In this study, I used scholarship on the impact of informal workplace learning to address the problem of auditors keeping pace with current business demands through informal workplace learning.

Scope and Delimitations

The research problem I addressed is the impact of informal workplace learning for financial statement auditors. The data collected was practitioners' self-perceived responses to survey questions about the variables of interest. Other theories identified in the literature but not used in this study include coaching, on the job training, and

apprenticeship theories. While each of these theories is related to informal learning, perceived organizational support theory provided a multidimensional framework to measure the impact of the workplace activities.

In this study, I originally planned to survey a group of new and young professionals whose data may not be generalizable to the audit profession nor to higher tenured professionals, but may be generalizable to professionals with less than 10 years of experience. I selected this population because it was consistent with the literature on informal learning. This study may not be generalizable to other accounting professionals outside of external auditing, but could be tested in other populations such as internal audit and tax groups in future studies. Nonetheless, the results add to the existing body of knowledge in the auditing profession.

Limitations

This study involved some limitations, including time and resource constraints. The surveys took less than 15 minutes to complete. Constraints also include instrument limitations such as the self-reported nature of the questionnaire; there could have been question misinterpretation. A third constraint was geographic given that the sample was taken only from practitioners in the state of Connecticut. Prior research on informal learning has had mixed results and its impact has not yet been measured in the accounting profession.

While I may have had a bias as a former auditing professional, this experience did not interfere with the empirical results. I included all pertinent results from the auditing professionals surveyed and have document the reasons for any exclusions. In the study, I

drew from organizational support theory to measure the impact of informal learning in the auditing profession at the individual-employee level. This approach was consistent with that of prior researchers.

Significance of the Study

I designed this study to replicate and extend previous research on informal learning in the auditing profession to advance theory and practice, and promote positive social change. This study makes a unique contribution to the auditing and human resource management literature and provides a foundation for future research that can help better understand the impact of informal learning on the auditing profession. With this study, I worked to fill the gap in the existing literature on the impact of learning opportunities in the auditing profession where there is rapid and continual change and informal learning is heavily relied on to diffuse knowledge and skills in a highly knowledge-based environment. Better-qualified auditors can help businesses achieve a stronger financial reporting oversight system.

Significance to theory. This quantitative study advances the literature on informal learning with a focus on the individual from a perceived organizational support theoretical lens. On-the-job or informal learning takes a variety of forms in the auditing profession, each of which should be fully explored. This study advances the knowledge of accounting informal workplace learning and its impact.

Significance to practice. This study advances accounting practice by showing the learning patters of public accountants. This study adds to the literature on learning opportunities that impact professionals who are keeping current with changing

professional demands and providing financial statement stakeholders with more accurate financial reporting.

Significance to social change. Skills accounting professionals had previously been educated for may no longer fit the current market because technology is rapidly changing job expectations. After the stock market crash of 1929, the financial irregularities of the early 2000s, and again after the financial crisis of 2008, financial statement stakeholders began demanding more transparency in financial reporting and the auditing profession. There were increased signs of a loss of confidence in the accounting profession, highlighted by well-publicized scandals where highly esteemed professionals misused their professional autonomy (Schön, 1983). Stakeholders evolving expectations included granular reporting requirements. In order to perform these services, auditors need to keep current with changing expectations and technology to provide financial statement stakeholders with accurate and transparent financial reports. After some financial statement stakeholders had decreasing faith in the profession, it was up to professionals to meet current market demands and update their own competencies.

Positive social change in the auditing profession begins with an understanding of skill acquisitions, a form of learning necessary for organizational performance. The audit function ensures compliance with accounting rules and auditors are expected to be professionally competent to provide their services to help ensure accurate accounting data and reports. Understanding the impact of auditors' informal workplace learning will help in better meeting financial statement stakeholders demands for stronger financial reporting oversight, thereby promoting positive social change.

Summary and Transition

In Chapter 1, I introduced informal workplace learning and its relationship to perceived organization support. This study of informal learning in the auditing profession was needed because there was a gap in the existing literature on informal workplace learning that needed to be addressed given the changing climate of the auditing profession and financial statement stakeholders loss of confidence in accurate financial reporting. In 2012, $164.2 billion was spent on formal learning, but estimates have shown that this accounts for approximately 25% of learning in organizations (Noe, Clarke, & Klein, 2014). Informal learning has been researched extensively from a qualitative perspective, but there is a current gap in quantitative literature on the topic. In Chapter 2, I present a comprehensive review of the current literature and the gap in existing literature about perceived organizational support, informal learning, and the auditing profession. Chapter 3 includes a detailed outline of the research methodology, and Chapter 4 includes the results of the study. In Chapter 5, I discuss how the results can be used in practice and to further the body of knowledge through scholarship.

Chapter 2: Literature Review

The accounting profession is in a time of rapid change; the skills professionals had previously been educated for no longer fit the current job market (Center for Audit Quality, 2015). The purpose of this quantitative survey study was to examine the impact of auditors' perceptions of informal workplace learning contexts using a perceived organizational support lens. The four aspects of informal workplace learning include management support, peer support, supportive organizational culture, and access to work resources (Maringka, 2013). This type of study is new to the public accounting profession, a profession known to be a rich learning environment (Watkins & Cervero, 2000) and structurally organized for on-the-job learning (Earley, 2001). Implementing effective informal learning strategies with public accounting auditors could increase the impact of operating efficiencies to better meet financial statement stakeholders changing financial reporting expectations. In this chapter, I detailed the current literature on perceived organizational support, workplace informal learning, and the auditing profession.

Literature Search Strategy

Perceived organizational support is how employees perceive the organization to positively or negatively value and support their individual contributions to the greater organizational goals. In this study, I analyzed perceived organizational support in regards to the impact of public accounting employee informal leaning on their employer organization. To do this, I used a variety of databases and search engines to retrieve current literature related to perceived organizational support and informal learning.

To retrieve current literature related to perceived organizational support and informal learning, I accessed academic databases using Walden University and Central Connecticut State University libraries. As of January 2017, Walden University subscribes to 104 databases, over 67,000 full-text journals, and over 3,500,000 dissertations. Central Connecticut State University subscribes to over 130 databases as of January 2017. I conducted searches using key search terms based on word combinations including *informal learning, perceived organizational support, accounting, audit,* and *on the job training*. I also used these searches terms for searches of Google Scholar.

Theories of informal learning date back to the early 20th century (Dewey, 2015) in the educational context, but informal organization learning theory began with the work of Argyris (1999), Bandura (1977), Eruat (2004) and was refined by Cseh, Watkins, and Marsick (1999). Perceived organizational support began with the work of Eisenberger, Huntington, Hutchinson, and Sowa (1986). In this review, I included literature published from 2013 to 2017 on informal learning, perceived organizational support, and the auditing profession. I also included several canonical studies on these topics. In the search, I sought to include both classical and contemporary views of organizational learning.

Theoretical Foundation: Perceived Organizational Support

There are many theories of organizational learning. Formal learning is defined in the literature as learning that has specific predetermined learning outcomes (Marsick & Watkins, 2015; Van Noy, James, & Bedley, 2015). In the auditing profession, formal learning can be measured by continuing education credits. Informal learning in the

workplace has many varied definitions in the literature, but the literature typically agrees that informal learning comes from a learner's experiences in organizations, where there is a balance between action and reflection, juxtaposing formal learning's greater emphasis on reflection than action (Marsick & Watkins, 2015). This study was grounded in perceived organizational support: how individual employees view the organization to positively or negatively value and support their individual contributions to the greater organizational goals.

Campbell (1993) has noted three antecedents to individual job performance: formal education, relevant job training (formal and informal), and previous experience. Campbell (1993) expanded job performance from an individual performance level to an organizational level where the individual employees within an organization work together for the organizational goal, similar to the organization as a machine metaphor (Morgan, 1997). In a learning capacity the individual employee's perceptions of how their employer organization invests resources in employee development for higher in-role job performance (Eisenberger et al., 1986). Perceived organizational support can be the positive and-or negative attitudes employees project onto organizations in the employee-employer exchange.

Perceived organizational support is a key component of Eisenberger et al.'s (1986) theory of organizational support. Perceived organizational support "suggests a predictive relationship between employees' perceptions and behavioral outcomes" (Maringka, 2013, p. 6). The theory posits that employees prescribe human-like

characteristics to their employer organizations and perceive the extent to which the organization values their contribution positively or negatively (Eisenberger et al., 1986).

Perceived organizations support begins at the individual employee perceptions of their employer organization. Similarly informal learning begins at the individual level with a desire to learn. Antecedent variables include fairness, supervisor support, and rewards/job condition or consequences including organizational commitment, withdrawal behavior, the desire to remain, absenteeism, employee strain, performance, and others. Eisenberger et al. (1986) reported a nonlinear relationship between perceived organizational support and performance. Perceived organizational support involves the role of the employer in exchanges with the employee. If the employees feel supported, they are more likely to contribute positively to organizational goals, enhance their identification with the organization, and expect that improved performance is rewarded. In this study, I used organizational support theory to examine training efforts and resources spent on employee informal learning. The data I collected on individual employee perceptions showed most participants perceived support from their organizations.

Informal Learning

The classical organizational frameworks researchers have compared organizations to machines (Morgan, 1997). The machine metaphor has multiple aspects including specialization, standardization, and predictability. Each person in an organization is assigned a specialized function, and the accumulation of all the functions builds the organization. This division or specialization of tasks illustrates one way in which the

organization functions like a machine (Miller, 2014). If you have a well-built and well-managed machine, then you will have a productive and efficient organization. Each employee is part of that larger machine, the organization. If one part of the machine or organization fails, then the entire machine fails since the organization is made up of many intricate parts all working together. The public accounting professionals working in the organization participate in formal (continuing education for credit) and informal education or on-the-job training. Carliner (2014) asserted that formal and informal learning are not separate but rather complementary to each other.

The theory and definition of informal learning varies in the literature, but each of the definitions shares some common themes. Key theorists in the informal learning literature include Argyris (1999), Cseh et al. (1999), and Eraut (2004). Each of these theorists have taken a learner-focused approach to informal learning in organizations. Informal learning involves a balance between action and reflection, while formal learning tends to emphasize reflection over action. In their work on informal learning, Marskick and Watkins's (2015) drew upon Dewey's (2015) purposeful learning from experience and Schön's (1983) reflection in action when developing their theory of incidental learning. Incidental learning is similar to informal learning, but typically the learner does not know that learning is happening. Key components of their theory are the integration of learning with a daily routine, the inductive process of reflection and action, the linking of individual learning to that of others, and that the learning is not highly conscious (Cseh et al., 1999).

Cseh et al. (1999) extended the model originally developed by Marsick and Watkins (2015) into the model currently used today by emphasizing the importance of context at the center of the informal learning model. The original model had it exterior to the components of informal and incidental learning. Cseh et al. (1999) a study conducted in Romania where communism had recently collapsed and business owners needed to learn management skills but also de-learn highly governmentally regulated business environments. The researchers argued that learning was stimulated mostly by the context of a rapidly changing economic environment. Current theories of informal learning have been developed in human resource management literature on workplace learning. Given the importance of context on informal learning, I determined that replicating the instrument developed and validated by Maringka (2013) in a particular organizational context, public accounting firms, would extend the work from a general business population to a specific population ripe with informal learning opportunities embedded in the organizational context.

Eruat (2004) posed a different theoretical framework of informal workplace learning derived from cognitive learning theory. Eraut focused on the first years of employment and sometimes mid-career learning. Focusing on how a given skill was learned in the workplace and the factors that affect the learning, Eraut contended that performance is a holistic action. Campbell et al. (1993) defined performance as a behavior of action observed or unobservable at an individual level that contributes to organizational goals. The how of learning comes from "participation in group activities, working alongside others, tackling challenges, and working with clients" (Eruat, 2004, p.

266 - 267), and each of these are typical work activities that promote learning. Inanc, Zhou, Gallie, Felstead, and Green (2015) offered evidence distinguishing different forms of direct participation in learning. The quality of feedback from participation in these activities both short-term, task specific, and long term led to employee commitment to employers. Mid-career learning more closely relates to Bandura's (1977) concept of self-efficacy, the ability to execute a task or perform a role, complimenting the organization as a machine metaphor where the individual employees make up the machine.

Argyris (1999) provided a deeper understanding of experiential learning developed with Schön (1983) in regards to single-loop learning–efficiency of job performance techniques–and double loop learning–critically questioning the process. Argyris again emphasized a balance between reflection and action in informal learning. His work focused on the relationship between people and organizations and that relationship's influence on organizational learning. Learning in an organization is fundamental to organizational growth at both the individual and organizational levels.

Similarities between Argyris (1999), Cseh et al. (1999), and Eruat's (2004) theories are evident in how all emphasize that learning that takes place daily while professionals are working at and in their profession. However, these theories are not interchangeable because there are nuances between each of them include the influence of people, organizational context, and performance. But similarities include the focus on balance between reflection and action, and the individual employee contributions to the organization. Each theory serves as a framework to analyze how individuals learn in the workplace to develop competencies.

Literature Review

Current research on organizational learning can be from a formal or informal perspective. Continuing professional education (CPE) is required for Certified Public Accountants (CPA) to maintain licensure by their state societies and the American Institute of Certified Public Accountants (AICPA). State to state, standards may vary but the AICPA currently requires members to complete 120 hours of CPE for each three-year period, typically measured by the calendar year. This CPE is considered formal education as it is measured for credit in terms of time, pre-set learning goals, and approved by the National Association of State Boards of Accountancy (NASBA). Formal learning quantified within the accounting profession in regards to time spent in class, the standard measure for continuing education. A typical criticism of measuring time spent in class is that it does not measure if any learning occurred, how active the learning was, knowledge retention, or even if the participant paid attention; simply a measure of time spent in an approved class. This type of learning is easy to quantify.

Informal learning had been hard to measure and less researched in the past as the name states it is much more informal in nature. The environment is typically the workplace not a formal classroom or conference room and many times the skills learned may be tacit. Tacit knowledge much like informal learning was difficult to measure as the professional may not be able to fully explain the breadth and depth of their knowledge on these skills. Rogers-Chapman and Darling-Hammond (2013) recognized the importance of real world work-based learning programs for career readiness consistent with the work of Dewey (2015). Many studies look at informal workplace

learning with various definitions of what informal learning is. This study will use the definition developed by Marsick & Watkins (2015):

> Formal learning is typically institutionally sponsored, classroom-based, and highly structured. Informal learning, a category that includes incidental learning, may occur in institutions, but it is not typically classroom-based or highly structured, and control of learning rests primarily in the hands of the learner. Incidental learning is defined as a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning. Informal learning can be deliberately encouraged by an organization or it can take place despite an environment not highly conducive to learning. Incidental learning, on the other hand, almost always takes place although people are not always conscious of it. (p. 12)

While informal workplace learning is unique and driven through trial and error, this does leave the opportunity for the professional to learn incorrect patterns or draw false conclusions. As informal learning and critical reflections are mostly self-regulated this leaves a significant amount of room for reinforcement of errors and-or frustration. When learning is informal in nature there are few reinforcements to help professionals extract lessons from experience thereby creating an opportunity for regular team gathering to support whoever is failing as failure is an opportunity for learning (Marsick & Watkins, 2015). This has been studied in the context of general practitioner doctors who typically work individually, and the practice of group reflection and supervisor role

offers the most opportunity for informal learning (Spaan, Dekker, van der Velden, de Groot, 2016). For the reflective practitioner, Schön (1983) identifies knowing in practice as a reinforcement system to frame roles, strategize, and act. This comes with conflict in the way the practitioner frames the role and-or when a practitioner "suffers from boredom or burnout and afflict his clients with the consequences of his narrowness and width which this happens the practitioner has over learned what he knows" (Schön, 1983, p. 61). Reinforcement of the learning of ineffective behaviors is a downfall of workplace learning on the job learning through trial and error and self-reinforcement methods.

Current qualitative research on informal workplace learning looks to identify rich narratives of the phenomenon of workplace learning. An idea that is known to be happening but has been hard to quantify. Cunningham and Hillier (2013) look at 40 middle managers in supervisory positions in a Canadian governmental K-12 education system to identify characteristics and process that enhance informal workplace learning using both questioners and interview techniques. This is a qualitative study the researchers are the research instrument and are provided with rich narrative answers in the interview questioning process of the 40 participants. An aggregated total of 588 individual examples of informal workplace learning incidents were identified in categories of: learning relationships, learning opportunities enlarging or redesigning one's job, and learning opportunities enriching one's job. The quantity of information gathered during the qualitative interview process detailed with open-ended questions.

Jansen (2015) takes a different qualitative perspective and looks at the dichotomy between formal and informal participation of sales persons in implementing a new vision

using accounting information in an auto dealership organizational environment. The study was what the author calls an interventionist study using formal organizational learning to juxtapose informal learning; examining the downward flow of a new vision using accounting information it is set in a car dealership environment and uses formal versus unstructured participation due to the organization of the various car dealerships. The study looks to identify the dispersion of information using an informal versus formal perspective.

Using semi-structured interviews, 30 big four partners were interviewed, to determine how technical auditing knowledge is created through on the job learning. On the job learning is another phrase for informal learning used in this article, but this article uses a theoretical background of tutoring and coaching relationships (Westermann et al., 2015). The partners ranged from newly admitted partners to experienced partners. The new partners are experienced and both groups would have a significant amount of experience, be versed in on the job learning as they would have gone through a similar process, in their professional upbringing within in the organization and be familiar with current firm expectations and policies. The research provides a rich description of the organizational context of public accounting firms in regards to learning and the learning environments. It contrasts formal versus informal learning and also identifies the various professional roles where such learning is taking place. Casey (2013) opposes this arguing that learning is too closely related to technology, where Inanc et al. (2015) stress direct participation in regards to technological skills. Westermann et al., (2015) provides a rich narrative of changes to the expectations of different professional roles in regards to

learning, technical competence, and information technology and the impact of these changes on professional learning.

For many years informal learning was hard to measure so much of the research was qualitative. There has been a recent shift as researchers develop quantitative instruments to measure how professionals gain the experience they need to perform successfully in the workplace outside of just professional development or continuing education classes. Most of these studies are not truly experimental research as the workplace is a complex environment and the environmental context adds to the value of the study (Watkins & Cervero, 2000).

Boateng, Dzigbordi Dzandu, and Tang (2014) and Reynolds (2014) both use descriptive analysis to identify relationships for organizational learning. Boateng et al. (2014) use quantitative cross-sectional design of 250 MBA and executive MBA students at a Ghanaian university to investigate personal and context-specific factors that motivate individuals to acquire knowledge. The study was conducted through a survey and was analyzed using quantitative description and factor analysis including t-tests and multiple regression analysis. Key findings include the importance of student academic background, attitude, and facilities affect knowledge acquisition. There is a little theoretical background discussed to develop hypotheses.

Reynolds (2014) also began with descriptive analysis and went further using multiple regression to identify if high self-regulated learners have higher learning outputs as defined by Bloom's taxonomy using a self-regulated learning (SRL) workplace learning instrument. The survey was self-administered to a group of Malaysian chartered

accountants launched in response to changes in the Malaysia chartered account standards to meet continuing professional development credits annually beginning in 2013 where chartered accountants needed to track and identify learning opportunities to meet minimum annual certification criteria. This research was to see if those who have higher self-regulated learning develop better long-term learning outcomes.

Current research by Salleh, Chong, Ahmad, and Ikhsan (2012) and Dalton, Buchheit, and McMilan (2013) also use regression analysis to confirm or disconfirm hypothesis in their quantitative studies. Salleh et al. (2012) explore the relationship between six learning factors:

- information and communications technology (ICT) know how and skills,
- job training,
- job rotation,
- feedback on performance evaluation,
- learning opportunities, and
- information sourcing opportunities on tacit knowledge sharing.

The population for the study was 203 accountants employed by the Accounting-General's Department in Malaysia with a response rate of 56%, but it is geographically and organizationally isolated as it only represents one governmental organization. The study began with six hypothesis but based on starting statistical analysis job training and learning opportunity hypothesis were aggregated together as one factor as the authors believe accountants "view job training as learning opportunities made available to them"

(Salleh, Chong, Ahmad, & Ikhsan, 2012, p. 435). This corresponds with the definition of informal learning used in this study.

Two other current quantitative studies use correlational analysis to quantify hypothesis affirmation or disaffirmation. Froehlich, Beausaert, Segers, and Gerken (2014) study business organizations and informal learning on career development and age. Specifically, how formal and informal learning activities affect employability based on age using structural equation modeling. There was a total of 780 participants from three different organizations two Dutch organizations and one Austrian organization looking at three different hypotheses. Key findings include that all employees regardless of age should participate in learning activities. Participation in learning activities is essential to maintain and develop employability, but individual employees are in charge of their informal learning activities.

Gerken, Beausaert, and Segers (2015) use correlational multivariate analysis to look at the relationship between employability the dependent variable and informal social learning, formal learning, and other demographic control variables. The purpose of the study is to look at specific social informal and formal learning activities and how they relate to employability using a population of 209 faculty members at a Dutch university. This study extends the prior research by combining two different previous studies. The study has a population of 209 teaching faculty members and a 10% response rate to the internet survey. The recent literature on informal learning has shifted from qualitative studies to quantitative studies each with a particular focus, as instruments are developed

to measure informal organizational learning from various aspects using many different techniques.

To date, there are few other quantitative informal learning studies set in an organizational/business context. There are no other quantitative studies on the impact of informal learning in the accounting context. It is important to review the impact of informal learning in an audit setting where learning is heavily relied upon to diffuse knowledge and skills in a highly knowledge based environment.

Public Accounting Workplace

The public auditing organizational context is a diverse service business dependent on the professionals working in it. Today's complex ever changing business environment auditors both internal and external must keep pace with "complicated governance and risk management landscape" (Ernst and Young, LLP, 2015, p.1). Workplace learning relates to both professional competence and career adaptability in todays organizational context (Lindsay, 2016). Deloitte concurs with these changing expectations of organizational governing bodies:

> Audits play a fundamental role in the capital markets, contributing to investors' ability to make informed and confident decisions. However, our latest survey of more than 250 financial statement preparers, audit committee members, and financial statement users reveal a growing consensus that the traditional audit must evolve in response to rising expectations for quality, information access, and timeliness. (Deloitte, 2015a, p.1)

Forbes Insights (2015) in a study with KPMG agrees with the changing expectations of financial statement users, noting:

> The audit profession is at a critical inflection point…the need for broader assurance and financial audits that yield powerful insights for audit committees, management and stakeholders. The financial audit is going through a transformation that is unprecedented […] transforming the financial audit and emanating the highest quality to the capital markets and other stakeholders to that they can make informed decisions. (Forbes Insights, 2015, p. 2)

Rapid technological changes and regulatory changes in the accounting profession over the past decade have changed the public accounting environment tremendously. From the collapse of Arthur Anderson and implement of Sarbanes-Oxley in 2002 to entering an environment where 100% audit testing of certain assertions is possible with technological changes in data analysis, visualization, and information technology. Each of the big four firms has posted papers positioning the rapidly changing professional climate (Deloitte, 2015a; Deloitte, 2015b; Ernst and Young, LLP, 2015; Forbes Insights, 2015; PricewaterhouseCoopers LLP, 2015a, PricewaterhouseCoopers LLP, 2015b). In this changing economic environment employees know they need to be adaptable to changes in the organizational climate and the public accounting profession is an environment that is known to be ever changing to business demands. In a changing business environment the skills and knowledge needed by auditors' is changing (Siriwardane, Hu, & Low, 2014). Informal learning has always been at the heart of the public accounting organization. A profession known for its pyramid structure set up for

learning from those with just a few years more experience through direct and constant feedback in the field, a better understanding of informal learning's perceived impact will contribute to the emerging literature in this category.

In the public accounting organizational context to date, there are two recent quantitative studies on informal learning. Salleh et al., (2012) looked at 203 Malaysian accountants and the influence of learning factors on tacit knowledge sharing. In cognitive psychology, procedural knowledge is knowledge exercised in accomplishing a task. This experience contrasts declarative knowledge in that it generally cannot be easily articulated, as it is usually nonconscious or tacit. Many times, the individual learns procedural knowledge without even being aware that they are learning. Research in the auditing profession finds, "basic declarative knowledge is commonly acquired through formal education, and procedural knowledge is acquired later during ones professional career" (Bonner & Walker, 1994, p. 159). Nonconscious or tacit workplace learning is researched in depth and is referred to as informal or incidental learning in the literature. Key findings (Salleh et al., 2012) include the combining of job training and learning opportunities and one factor because "accountants view job training as learning opportunities made available to them" (p. 435) consistent with informal learning.

Lindsay (2013) looks at continuing professional development (CPD) in an output based environment. This means that CPD is self-monitored based on self-learning and is not like the United States input based model of time spent in formal learning. The study looks to explore learning activities of 501 survey responses of members of the Institute of Chartered Accountants in England and Wales (ICAEW). Research looks at the questions

of which learning activities accountants feel are most relevant, which learning activities accountants identify as CPD, what motivates accountants to learn and demographic variances between responses. Conclusions are that informal learning activities are considered just as relevant as formal activities but not regarded as CPD by the professionals. Also, findings note that self-motivation is the biggest factor in driving accountants to learn. Accounting professionals deem informal learning methods of doing the job ranked number two versus their perceived credit for this type of learning, ranked eighth. This perceived difference is important to note in that accounts want to learn to further themselves but do not consider those tasks they seek out themselves to be CPD.

How do public accounting professionals stay adaptable to changing business demands for new skills and knowledge? One facet is workplace learning, also called on the job training or as called in the literature informal learning. This is a type of knowledge acquisition set in an organizational context but the learning grows from a social contract with the individuals working within the organization to "achieve higher order collective goals" (Marsick &Watkins, 2015). Quantitative research on informal learning is just emerging, and the literature in the accounting profession is also just developing. Maringka (2013) developed and validated a quantitative instrument to measure informal workplace learning from four facets: management support, peer support, a supportive organizational culture, and access to work resources such as time and technology. This study will replicate and extend the work of Maringka (2013) into the public accounting profession highlighting the current literature on learning in the

auditing profession outlined by the four informal learning aspects developed by Maringka (2013) and supported by current literature.

Management Support. The components of support are broken up into four parts, first management support including support from those in a higher organizational structure role such as a supervisor and later peer support those at a lateral position. Consistent with the literature on feedback seeking behavior this attribute can be aggregated or bifurcated by supervisor feedback and peer feedback sources (Anseel, Beatty, Shen, Lievens, and Sackett, 2015) this paper segregated supervisor and peer support variables. The pyramid structure of the public accounting workplace was set up to weave informal learning into the supervisory and review process (Andiola, 2014; Earley, 2001; Watkins & Cervero, 2000; Westermann, Bedard, & Earley, 2015). In regards to supervisor support Anseel, Beatty, Shen, Lievens, and Sackett (2015) note that high quality relationships are positively related to feedback seeking behavior. Feedback is the fabric of supervisor support in the public accounting workplace, research on feedback in the audit profession will be key support for management and peer support.

Workplace learning involves a social contract between professionals working together to achieve higher organizational goals. "Learning and working is in 'social units' where interactions are not usually subject to design and controlled by trainers" (Marsick & Watkins, 2015, p. 35). This also relates to the different structure of learning where there are not the formal teacher-student roles of formalized learning models. Learning in this way relies on the feedback process. The quality and amount of feedback depends on the reviewer and learning environment discussed herein. In an auditing

environment, auditing firms depend on the workpaper review process to provide supervisor review and feedback to less experienced auditors (Trotman et al., 2015) through a knowledge dispersion process. Deloitte (2015) firm culture uses "innovative coaching methods […] to drive on the job learning" (p. 15). Dalton and Viator (2013) surveyed public accounting professionals and found inadequate supervisory feedback environments relate to less organizational commitment, but mentoring can mitigate the adverse effects. In a literature review Andiola (2014) asserts the importance of performance feedback to develop and improve auditors knowledge and in effect audit quality. Schaefer (2013) discovered in a quasi-experiment of 118 practicing audit seniors from each of the big four audit firms (ranging in experience from 2.6 to 8.5 years) that they are less likely to seek knowledge laterally due to social costs. But will seek knowledge upward but an internal quality review mitigates the social costs and encourages advice seeking behaviors. Marignka (2013) also found a significant positive relationship between management support and informal learning impact as measured by engagement.

The supervisor in an audit firm acts as a mentor/coach to novice professionals by responding to questions and reviewing and providing feedback on each engagement (Earley, 2001, Westerman et al., 2015). An audit team is comprised of various experienced professionals organized in a team at different hierarchical levels. With more staff support and less along the vertical chain upwards depending on the client's size and complexity headed up by an audit partner and one or more senior manager, manager(s), senior(s), and audit staff members (Deloitte, 2015). Less experienced team members are

supervised by those with more experience so there is constant feedback for everyone from the partner down (Deloitte, 2015; International Federation of Accountants, 2014). Some important items to note from Anseel et al., (2015) are findings based on tenure, age, and experience negatively relate to feedback seeking and use. Older, more experienced employees do not perceive the value of feedback as high. Also, the importance of the feedback environment both positive and negative and orientation such as positive or negative mentoring relationships and the relationship to feedback seeking and use.

Peer Support. At the heart of the public accounting profession is the people within the profession (Center for Audit Quality, 2015). In a qualitative study of 40 K-12 education middle managers each in supervisory positions looked to define characteristics and processes that enhance informal learning in the workplace (Cunningham & Hillier, 2013). Seven key themes identified that recognized the importance of informal learning in organizations. There was three identified value added themes from a supervisor perspective including relationships, enlarging or redesign jobs, and enrichment opportunities. Four process topics for "facilitating informal learning" (Cunningham & Hillier, 2013, p. 37) were, planning, active learning and modeling, relationship dynamics, and tying learning to particular on the job applications.

Za, Spagnoletti, and North-Samardzic (2014) merge two frameworks through a complex adaptive systems theory lens to form a new framework to look at how workers interact with each other and digital technologies when they engage in informal learning. This put into a continuum with the three activities of informal learning: reflection on

daily activities, knowledge sharing, and innovative behaviors on an internal external scale of feedback (vertical) and locus (horizontal). Conclusions are the recognized importance of informal learning in organizations and growing use of technology for informal learning but cite the lack of connection between the two in the literature.

Kadous et al. (2013) found in quasi-experiment of 88 audit seniors from a big four firm a strong social bond between peers those at the same rank/title and informal advice justification. De Grip (2105) found "knowledge spillovers between peers […] contribute to firm productivity" (p. 1) using human capital theory, a theory based on firms investments in formal education and training. This conflicts with Schaefer (2013) where din a quasi-experiment of 118 practicing audit seniors from each of the big four audit firms (ranging in experience from 2.6 to 8.5 years) that they are less likely to seek knowledge laterally due to social costs. Van Noy, James, and Bedley (2016) concur with this idea that mentoring is less effective the closer in hierarchical organizational level, but peer to peer learning are productive to employees. Maringka (2013) found a significant positive relationship between peer support and workplace informal learning impact on engagement and performance in general business setting. Results on peer support are conflicting across studies within the accounting and other professions.

Supportive organizational culture. Learning is a process by which organizations can evolve and business organizations each foster their culture differently. Public accounting firms foster "a strong culture of learning and support for learning" (Watkins & Cervero, 2000, p. 3). The Center for Audit Quality (2015) asserts:

> Public company audit firms have a rich tradition of […] mentorship programs, and ongoing training and development opportunities for employees. […] In an effort to address dynamic business conditions and as a part of its ongoing quest to enhance audit quality, the auditing profession is committed to a continuous cycle of improvement and development. This commitment is exemplified through numerous training and quality control programs. (p. 1)

While the public accounting profession is shown to have a supportive organizational culture Maringka (2013) found in general business organizations informal learning does have a positive significant impact on engagement but not on performance impact measures. This is consistent with Eruat (2004) noting a positive culture of support and feedback affects learning positively. The same conclusions were drawn by Caruso (2017) in regards to promoting knowledge sharing and Wahab, Saad, and Samsdin (2016) in a case study of five chartered accountants where lack of support from others hindered participation in informal learning activities.

Current research on organizational support includes Liliana, Niculae, and Mihaela, (2013) a qualitative study of 10 Romanian audit managers; eight from one big four firm two from a small firm and their results in regards to the balance scorecard model for organizational performance. The purpose of the article is to look at how organizations performance perceived in public accounting firms from the perspective of audit managers using the balance scorecard approach. The theory used was stakeholder theory in regards to performance and different stakeholders interests. Findings note in regards to the learning and growth measures include big four offices have a formalized

learning model and small offices have an informal learning model. When looking at organizational culture firm type will be split between big four and non big four firms for demographic purposes.

Access to work resources. Deloitte (2015b) embodies an atmosphere conducive to professional development both formally and informally. Offering over 767,000 hours of formal training their continuing professional requirements are "supplemented with on the job learning" (p. 15). Audit firms ensure "audit quality keeps pace with emerging economic, business, financial, and regulatory conditions […] critical to continuously enhance the overall strength and integrity of the financial reporting system" (Deloitte, 2015b, p. 6). Firms have a societal obligation to meet organizational changes to ensure they are providing effective oversight of capital markets and protecting investors interests and do so by providing their employees access to work resources including time and technology.

Organizational change began with the industrial revolution and evolved into the globalized economy of the 21st century. One key element of the globalized economy is ever changing technology. To stay current with today's organizational demands professional needs to continually be motivated to further their own skill sets (Manuti, Pastore, Scardigno, Giancaspro, & Morciano, 2015). This self-directed learning attitude has as positive significant predictor of informal learning behaviors (Jeske & Roßnagel, 2016; Raemdonck, Gijbels, & van Groen, 2014). Organizations as they move towards globalization, responsibilities within organizations are shifting from the company to the individual (Forbes Insights, 2015; Morgan, 1997). People are expected to become

lifelong learners to maintain current in professional expectations in a globalized economy. Employee's are using formal and informal education opportunities to keep current with organization and financial statement stakeholders demands. The public accounting firm is an organization that is a supportive learning environment (Watkins & Cervero, 2000) and for stimulating knowledge creation and promoting the sharing of knowledge and practices among workers. Change in the workplace are rapid and continual, which creates challenges for traditional, formal learning (Ellinger, 2005). Formal training cannot keep up as it becomes nearly impossible to follow the need for learning and development activities (Eraut, 2004). The auditing profession values its people as its greatest asset (Center for Audit Quality, 2015) this includes investing in employees.

Work resources include time and a growing emphasis on technological skills. To date, there is little research on work resources and informal learning but the parent study found no significant relationship between access to work resources and the impact on informal learning as measured by engagement and performance. Wahab et al. (2016) identified lack of time, as key reason accountants wouldn't participate in informal learning activities. This study will add to the limited research in this area.

Impact. The dependent variable is split into two separate measures impact as measured by engagement and impact as measured by performance. The split is the result of a six-component factor analysis in the instrument development (Maringka, 2013) as peer support being the only independent variable showing a relationship between informal learning and performance consistent with De Grip (2015). Coelho, Rodrigues,

Fogaca, Teixeira, and Richter (2017) found a strong relationship between management support and employee performance in a study of 234 employees at a Brazilian organization. Management support, peer support, and supportive organizational culture each had a significant positive relationship between the impact variable engagement. As impact is a very broad term and has already been deemed hard to quantify impact on engagement and performance separated help to refine further the broad term. Data on impact is limited, but the Organizations Work and Lifelong Learning survey, Canadian General Social Survey and Workplace and Employer survey all out of Canada are trying to develop measures (Van Noy et al., 2016). "The OECD Program for the International Assessment of Adult Competencies (PIACC) measure informal learning at work" (Van Noy et al., 2016, p. 50). Impact on informal learning is measured using three questions aimed at the self-perceived performance satisfaction, knowledge and skills, and performance standards expectations consistent with Van Noy et al. (2016).

Impact measured by engagement is measured by five questions relating to the literature on self-reported organizational pride and contentment. This is consistent with workplace engagement literature Noe, Clark, and Klein (2014) note adopted informal learning benefits organizationally through improved employee performance as employees understand how their own work contributes to the greater organizational goal; consistent with perceived organizational support theory. Also, Noe et al. (2014) notes improved peer to peer and supervisor relationships. Shuck, Ghosh, Zigarmi, and Niman (2012) review the employee engagement literature noting engagement is "performance on immediate work related tasks" (p. 15). Church (2014) in a qualitative study of auditors

found organizational commitment relate to social contexts especially for lower level professionals. Engagement job attitude variables include satisfaction and involvement/commitment.

Summary and Conclusions

In a rapidly changing profession, employees are continually expected to stay current on emerging skill sets. While public company auditors are required to complete formal continuing education, formal education cannot always keep pace with emerging organizational trends and needs. The audit profession is structurally organized to provide its employees with on the job training or informal learning (Watkins & Cervero, 2000; Westerman et al., 2015). Current qualitative studies (Cunnigham & Hillier, 2013; Jansen, 2015; Westerman et al., 2015) focus on providing a rich narrative of informal learning and various organizational contexts. Emerging quantitative studies (Boateng et al., 2014; Reynolds, 2014; Salleh et al., 2012; Dalton et al., 2013; Froehlich et al., 2014; Gerken et al., 2015) look to measure how professionals gain the experience they need to perform successfully in the workplace outside of formal professional development and-or continuing education classes. A quantitative study of the impact of informal learning will be new to the public accounting profession, a profession known to be a rich learning environment (Watkins & Cervero, 2000) and structurally organized for on the job learning (Earley, 2001). Understanding the perceived impact of informal learning in the public accounting organization will help to understand better how professionals adapt and respond to rapid and continual change in the workplace. I replicated and extended the

work of Maringka (2013) into the auditing profession to address the literature gap. The methodology of this study is described in detail in Chapter 3.

Chapter 3: Research Method

The purpose of this cross-sectional, quantitative, survey study was to examine the impact of auditors' perceptions of informal workplace learning contexts using a perceived organizational support theoretical lens. Perceived organizational support "suggests a predictive relationship between employees and perceptions and behavioral outcomes" (Maringka, 2013, p. 6). This type of study is new to the public accounting profession, a profession known to be a rich learning environment (Watkins & Cervero, 2000) and structurally organized for on the job learning (Earley, 2001). To address the literature gap, I replicated the work of Maringka (2013), extending it into the auditing profession. I emphasized learning at the individual level, and used a self-reported survey that included questions related to the four aspects of informal learning (management support, peer support, supportive organizational culture, and access to work resources), which served as the independent variables. The dependent variables in this study were the independent variables' impact on informal learning, as measured by engagement and performance. This chapter outlined the research design and rationale, methodology, data analysis plan, and threats to the validity of the study. It also includes a detailed discussion of the originally proposed population, instrumentation, and operationalization of constructs for future replication.

Research Design and Rationale

The variables of interest for this study were the dependent variable impact on informal learning (broken down into engagement and performance), while the independent variables were the four aspects of informal learning: management support, peer support, supportive organizational culture, and access to work resources (see Maringka, 2013). The variables come from a previously validated instrument, which I discussed in Chapter 2 in regards to their use in both informal learning and the public accounting organizational context. I updated demographic information questions on the instrument to concur with literature in the public accounting organizational context. In the study, I sought to identify casual relationships between variables use multiple regression analysis. More specifically to determine the relationships between the four aspects of informal learning identified by Maringka (2013) management support, peer support, supportive organizational culture, and access to work resources and the impact on workplace informal learning in the public accounting profession. Specifically looking at a population of external financial statement auditors. Maringka (2013) used multiple regression to answer the hypothesis , that work was replicated and extended in this study. I distributed the Informal Learning Work Context (ILWC) instrument via an email survey, and then aggregated the data to test the hypotheses. While Maringka (2013) focused on validation of the instrument, I used it to study the impact of the four factors in a different organizational setting while also extending various demographic factors and exploring the self-reported perceived amount of time spent on informal learning by public accounting auditing professionals. Marignka (2013) also looked at the dependent

variable frequency of informal learning, but reported a low internal consistency on this dependent variable; this construct is not used in this study.

Other recent research on informal learning using multiple regression analysis include Boateng, Dzigbordi Dzandu, and Tang's (2014) quantitative cross-sectional study of 250 MBA and executive MBA students at a Ghanaian university designed to investigate personal and context-specific factors that motivate individuals to acquire knowledge. They gathered survey data and analyzed them using quantitative description and factor analysis including *t* tests and multiple regression. Key findings included the importance of student academic background and attitude, and that facilities affect knowledge acquisition. In a quantitative dissertation, Reynolds (2014) used descriptive and multiple regression analysis to address the central research question that asked: Do high self-regulated learners (SRL) have higher learning outputs as defined by Bloom's taxonomy using an SRL workplace learning instrument? The survey was self-administered to a group of Malaysian chartered accountants. Reynolds found that negative factors of informal learning included lack of time due to heavy workload, a lack of support from others, structural inhibitors, lack of funds, and lack of mistake tolerance. Meetings were the most frequently engaged in informal learning activity. Reynolds reported that negative factors indirectly mirrored the factors management support, peer support, supportive organizational culture, and access to work resources herein.

Time and resource constraints in conducting this study included the time necessary to collect responses. I sent only two email requests to participants. There were also instrument constraints including the self-reported nature of the questionnaire while

may have led to question misinterpretation by some participants. A third constraint was that the population was limited to auditing practitioners in the state of Connecticut. A non-response bias for members who did not respond was looked at. I obtained IRB approval to use human subjects in the research (IRB #10-03-17-0462074).

Methodology

Population

The target population was external auditing professionals. The original sampling plan was to distribute an email survey to members of the Connecticut Society of CPAs (CTCPA) organization. I specifically targeted members of the new and young professionals group that represents members under the age of 35, see details on final sample in Chapter 4. This group included practicing public accounting professionals with 12 years or less experience from identified titles of staff to manager roles, and was consistent with Marsick and Watkins (2015) discussion of informal workplace learning and employment tenure. This aligns with "experience" as defined in the literature, where experience is typically measured by job working years (Hawkins et al., 2016) and task-specific experience (Earley, 2001). An auditing professional for this study was defined as spending greater than 50% of their chargeable hours on audit and audit-related tasks because larger firms have a clear audit/tax split, and small firms professionals may cross both roles (see Hawkins et al., 2016).

When determining the population of auditors for a study on informal learning, it is important to use a group with a lower level of knowledge and experience (Earley, 2001; Hawkins et al., 2016). The final population had a mix of tenure experience years that

enabled me to look at differences between this variable, see further details in Chapter 4. Entry into the auditing profession is a new life experience that represents a multifaceted "context for learning that plays a key role in influencing the way in which people interpret the situation, their choice, the actions they take, and the learning that is effected" (Marsick & Watkins, 2001, p. 29). One typical measure of expertise is years of experience, or job title based on tenure. Years of experience has intuitive appeal but does have limitations because the empirical relationship between tenure years and performance is mixed, as there is little theoretical link. In the auditing profession, auditors with the same tenure are likely to have had different specific experiences and training through which they acquired different knowledge (Boner & Walker, 1994). Using tenure as a secondary measure of expertise allows a conceptual basis for differentiating auditors with the same tenure but different learning opportunities.

Informal learning theory supports the use of those with varied levels of experience where lesser-experienced employees are shaping and defining tasks, and employees with greater than 10 years of experience are more globally-focused, rather than individual task-focused, in their learning (Marsick & Watkins, 2015). This can be compared to the triangular structure of auditing engagements in which more experienced professionals provide greater oversight and more complex tasks and there is more lower-level staff performing the less complex task-specific work.

Sampling and Sampling Procedures

The intended population of this study was proposed to include all registered members of the CTCPA new and young professional group. The final group used in the

sample was from my LinkedIn connections. I sampled this professional group using a non-random sampling strategy. This strategy is considered appropriate for survey research to provided adequate sample size (Kish, 1995). The dependent variable is be continuous, and the independent variables are continuous and categorical. There is separate research questions for each dependent variable. I distributed the survey during a typically quiet seasonal workload time, and first thing in the morning, local time. The survey takes approximately 15 minutes to complete, and I offered an incentive in the form of a gift card to optimize the response rate.

There is no consensus on how best to determine sample size in the literature. For each independent variable, a general rule is to have anywhere from 5 to 20 cases/instances (Field, 2014; Frankfort-Nachmias, Nachimas, & DeWaard, 2014), this is not an exact sample size measure, and other resources such as G*Power or prior studies can be used to support sample size. Field (2014) also noted that when using multiple regression for less than six predictor variables, a sample of 100 is okay for medium effect. In a recent study, Maringka (2013) used a total of 477 participants (19% response rate) to validate the ILWC instrument I used for this study. In another study on informal learning, Lindsay (2013) used 494 usable responses (15.7% response rate) to identify perceived CPD activities. Because there were less than six predictor variables, I considered a sample size of greater than 100 participants adequate.

Procedures for Recruitment, Participation, and Data Collection (Primary Data)

The proposed participants were to be contacted directly by the CTCPA based on their membership pool. The CTCPA controls their member contact to ensure anonymity

of participants so that the researcher would have no have access to identifying data. The final sample was contacted via my LinkedIn wall. As described in Chapter 4, an initial LinkedIn posting was posted in July 2017 initiation participation and included an electronic confirmation agreement to participate. The email invitation included a consent page describing that participation is voluntary and participants can withdrawal at any time without penalty. The original data collection plan was to be collected electronically by the CTCPA, and the raw data was to be disbursed to the researcher for further coding and analysis. The final procedures data was collected by me electronically using LinkedIn, see Chapter 4. There were no specific follow-up procedures other than a final question asking for participants' email addresses should they like to receive the study results and my contact information for any issues that participants would like to discuss. I discuss recruitment further in Chapter 4.

Pilot Study

I conducted a brief pilot study with a sampling of five practicing tax professionals so as not to overlap participants from the same sample as the study. The pilot study mirrored the proposed study, but was launched in advance to ensure timing and accuracy of the survey instrument along with any potential questions participants may have before the entire survey was launched. I sent the survey instrument email request out at one initial launch and a second follow-up by email 1 week after for nonrespondents.

Instrumentation and Operationalization of Constructs

Marinka (2013) developed and validated an instrument to measure the impact of informal learning activities from an employee perspective using attributes found in

previous literature. Perceptions were measured on a Likert scale using a scale of one (strongly disagree) to five (strongly agree). I obtained permission to use this instrument for this study via email from the original developer (see Appendix B). The ILWC instrument was developed and validated in a four-phase plan (item generation, content validity analysis, confirmatory factor analysis, and exploratory factor analysis) to identify a good model-fit to the constructs. Marinka then conducted correlation and multiple regression to quantify the perceived impact of informal learning. Internal reliability of the six original latent variable constructs had Cronbach's alpha coefficient value above the .70 threshold ($X > .78$), indicating good model fit and instrument reliability with the data collected (Marignka, 2013, p. 56). The original instrument validation the dependent variable frequency on informal learning activities had a low internal consistency in Marignka's study, so I removed the dependent variable from this study and set the question to numerically value the perceived hours spent on informal workplace learning in the auditing profession. The instrument has only been tested in one population from Wilson Learning based in Minneapolis, a population of general working professionals including sales, leadership, development, and performance improvement specialists who have had at least one informal learning instance.

Multiple regression analysis was appropriate for this study, as it helped me look at the predictive value of the four components of informal workplace learning with its perceived impact on external audit professionals. Maringka (2013) developed the Informal Learning Work Context survey instrument. The instrument I used included:

- 28 items to measure the four factors of informal learning work contexts (Marinka, 2013);
- 10 items to measure the [perceived] impact of workplace informal learning (Marinka, 2013);
- 7 items to gauge the frequency of informal learning (but because this dependent variable showed low internal reliability in Marinka's (2013) study, I used it to numerically value the perceived hours spent on informal workplace learning in the auditing profession); and
- 8 demographic questions, adapted from Bobek, Hageman, and Radtke (2015) for the external auditing profession.

Data Analysis Plan

The method of inquiry in the study was through an electronic survey where data was obtained through survey software SurveyMonkey and exported to a flat file and imported into SPSS v21.0 to determine the predictive validity of the data collected. This survey mechanism is commonly used in survey research due to its ease in set up, launch, the collection of participant responses, and electronic coding which leaves less room for human error. Since the questioner survey has already been previously validated (Maringka, 2013) the survey can be used in this study with updated demographic questions for the particular population of external financial statement auditors after internal university approval. An advantage of using a web-based survey is the quick response time and the large audience you can reach. The downside is the low response

rate due to the population under study being busy working professionals and email overload.

In this research I examined the impact of workplace informal learning opportunities for external audit professionals. Thus the following research questions were posed:

RQ1: What is the relationship between external auditors' perceptions of informal learning work contexts management support (MS), peer support (PS), supportive organizational culture (SOC), and access to work resources (AWR) and organizational impact as measured by engagement?

$H_0$1: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with engagement.

H_A1: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with engagement.

The above hypothesis will be tested through running the following multiple regression model:

$$Y_{Engagement} = \beta_0 + \beta_1 MS + \beta_2 PS + \beta_3 SOC + \beta_4 AWR + \varepsilon_i \quad (1)$$

The dependent variable is the mean score for engagement from various subsets of Likert scale questions on the survey instrument and the four independent variables are the mean scores on responses from the ILWC survey for the four informal learning work contexts (management support, peer support, supportive organizational culture, and access to work

resources). The measures are mean scores from various subsets of Likert scale questions on the survey instrument. The hypothesis associated with this model is as follows:

$H_0 1$: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ (2)
$H_A 1$: At least one $\beta_i \neq 0$, i = 1-4 (3)

RQ2: What is the relationship between external auditors' perceptions of informal learning work contexts (management support, peer support, supportive organizational culture, and access to work resources) and organizational impact as measured by performance?

$H_0 2$: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with performance.

$H_A 2$: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with performance.

The above hypothesis will be tested through running the following multiple regression model:

$$Y_{performance} = \beta_0 + \beta_1 MS + \beta_2 PS + \beta_3 SOC + \beta_4 AWR + \varepsilon_I \quad (4)$$

The independent variables are consistent with those from RQ1 above. This research questions will look at the relationship between the same means for the four informal learning work context independent variables management support, peer support, supportive organizational culture, and access to work resources but in this will look at the dependent variable impact of informal learning on performance. The impact of informal learning on performance variable is measured on the mean scores from various subsets of

Likert scale questions on the survey instrument. The hypothesis associated with this model is as follows:

$H_0 2$: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ (5)
$H_A 2$: At least one $\beta_i \neq 0$, i = 1-4 (6)

RQ3: What is the relationship between external auditors' perceptions of informal learning work contexts (management support, peer support, supportive organizational culture, and access to work resources) and organizational impact as measured by performance and engagement combined?

$H_0 3$: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources to the impact of informal learning.

$H_A 3$: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources to the impact of informal learning.

The above hypothesis will be tested through running the following multiple regression model:

$$Y_{Impact\ of\ informal\ learning} = \beta_0 + \beta_1 MS + \beta_2 PS + \beta_3 SOC + \beta_4 AWR + \varepsilon_1 \quad (7)$$

The independent variables are consistent with those from RQ1 and RQ2 above. This research questions will look at the relationship between the same means for the four informal learning work context independent variables (management support, peer support, supportive organizational culture, and access to work resources) but in this will look at the dependent variable impact of informal learning on performance and engagement combined. The impact of informal learning variable is measured on the

combined mean responses to the 10 survey question responses on impact of informal learning on engagement and performance combined, to represent the impact of informal learning. The hypothesis associated with this model is as follows:

$H_0 3$: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$ (8)
$H_A 3$: At least one $\beta_i \neq 0$, i = 1-4 (9)

RQ4: What is the impact of demographic variables gender, experience, and firm type on auditors' workplace informal learning?

$H_0 4$: There is not a significant relationship between gender, experience, and firm type on the auditors' informal workplace learning.

$H_A 4$: There is a significant relationship between gender, experience, firm type on the auditors' informal workplace learning.

The above hypothesis will be tested through running the following multiple regression model:

$$Y_{Impact\ of\ informal\ learning} = \beta_0 + \beta_1 \text{gender} + \beta_2 \text{experience} + \beta_3 \text{firmtype} + \varepsilon_I \quad (10)$$

Demographic variables of interest in question two include the dichotomous variable male-female, experience will be measured in years worked in the profession, a continuous variable, and firm type will be an dichotomous variable based on non big four-big four, firm type as referenced in both the literature and in the profession. Each of these variables will be coded based on participant survey responses. Variables were constructed on prior literature. The impact of informal learning variable is measured on the combined mean responses to the 10 survey question responses on impact of informal learning on engagement and performance combined, to represent the impact of informal learning. The hypothesis associated with this model is as follows:

$H_0 4$: $\beta_1 = \beta_2 = \beta_3 = 0$ (11)
$H_A 4$: At least one $\beta_i \neq 0$, i = 1-3 (12)

One quantitative analysis method that can be used to look at the impact of informal learning is multiple regression analysis. Linear multiple regression analysis can evaluate the strength of the dependence or casual relationship between the independent variables on a dependent variable, forecast changes in the dependent variable when the independent variable changed, and predict trends or future values (Field, 2014). It is considered the most common form of linear analysis meaning there is a linear relationship between the dependent and independent variables. The three stages of review are to first look at the correlation and direction of the data, next estimate the fit of the line to the model and lastly evaluate the validity and usefulness of the model (Field, 2014). In any linear model, outliers are important to check for as they can affect results. At a simplistic level, the model is looking to fit a single line through a scatter plot of various data points.

After data has been collected and cleaned the relationship between the values, or R the multiple correlation coefficients will be looked at to ensure it is between +/- 1.00 where 0 would be no relationship, and 1 is a perfect fit of the data. The method of variable input was simultaneously otherwise known as forced entry consistent with the original study (Marignka, 2013). This method relies on theoretical reason from previous literature for variable input, but the experimenter does not decide on the order of the variables entered.

The variables of interest for the study herein are the dependent variable impact on informal learning while the independent variables are the four aspects of informal

learning management support, peer support, supportive organizational culture, and access to work resources developed and validated by Maringka (2013). The variables come from a previously validated instrument and are further supported in Chapter 2 in regards to their use in both informal learning and the public accounting organizational context. Next independent t-tests will be run to determine which predictor variables contribute significantly to estimate the outcome value. The *b*-value is significantly different than zero if less than .05. If significant the predictor makes a significant contribution to predicting the outcome value. The *F*-static will be looked at to determine the significance of the entire model.

Next, after the model is completed the statistical assumptions of multiple regressions must be met. Assumptions include that there is a linear relationship between the outcome and predictor variables. The multivariate should have normally distributed errors, and there should be homoscedasticity for each of the predictor variables (Field, 2014). Also as there are covariates the researcher must check that there is little or no multicollinearity; the covariates are not too highly correlated to each other. There should also be independence; the residuals associated with one observation should not correlate with the errors from any other observation. Bias can arise if certain assumptions are not met. If bias occurs such as assumptions are not met then the model may not be generalizable outside of the sample (Field, 2014). Bias can also come from a small number of unusual cases, referred to as outliers or residuals that can significantly influence the equation. Outliers and influential cases were identified to look for any cases that are substantially different and may cause bias in the model.

Goodness of Fit was assessed to determine how well the line fits the actual data to be collected. This was done by looking at the R^2. The model needs to be cross-validated to see if the model can predict the outcome in different samples. This was done by looking at the adjusted R^2 or how much variation in the dependent variable is accounted for by the independent variables in this sample. The adjusted R^2 indicates the decrease in predictively.

Threats to Validity

External Validity

In each design, sample designing is imperative as there are threats to the internal and external validity that must be considered to ensure accurate reporting. Threats to the generalizability to the study across different settings compromise confidence in the study's applicability to other groups. The population studied should be representative of the total population. The more representative, the greater the confidence in the generalizing results. Population validity was addressed in this study by using a new and young professional group this would not be generalizable to all audit professionals nor higher tenured professionals, but rather professionals with less than 10 years experience consistent with the literature on informal learning. This study may not be generalizable to other accounting professionals outside of external audit but could be tested in other populations such as internal audit and tax groups in future research. In addition to population validity, the study needs to address interaction effects of testing, selection bias, and experimenter effects. The pilot test was done with a small sample of self-identified tax accounting professionals to prevent overlap of pre-testing interacts to an

untested population. Also, there was no pretest group included in the final results nor will the task include any physical performance. There should be no effect of testing. The researcher does have a bias as a former audit professional, but this experience neither should nor interfere with the empirical results. All results for audit professionals surveyed will be included if excluded the results will document the reason for the exclusion.

Internal Validity

Threats to internal validity compromise confidence in conclusions reached about the relationship of the variables studied. A high degree of internal validity is necessary to conclude on the strong casualty of evidence. Should there be, low internal validity conclusions of causality have little to no evidence. Multiple regression analysis is looking for the relationship between changes in the independent variable caused by changes in the dependent variable, the independent and dependent variables chosen must be supported from the literature as changes in the dependent variable could be attributable to other causes.

To conduct internal validity of the data used and to perform multiple regression analysis on the constructs; four independent variables and two dependent variable constructs for Cronbach's alpha coefficients for use in predictive validity. To address statistical regression concerns participants were given the same instructions written in plain, clear English that mirror the original study (Marignka, 2013). Maturation was not a concern, as the instrument should take less than 15 minutes to complete. There was no decreased fatigue. This should be the same for experimental mortality. All participants

selected received the same email with the same instructions and instrument. Only the nonresponses in the first round were followed up with a second inquiry. All participants had an equal chance of participation. There were no changes in the measurement of the dependent variable impact of informal learning from the original study. There was no design contamination as there will be no comparison groups other than looking at variations between demographic variables.

Construct Validity

Multiple regression analysis was used to test the predictive validity of the four independent variables auditors' self-reported perceptions of management support, peer support, supportive organizational culture, and access to work resources on the dependent variable impact of informal workplace learning as measured by engagement and performance.

Ethical Procedures

This study will be reviewed by Walden University's Institutional Review Board (Study number 10-03-17-0462074) (see Appendix A). Each of the participants contacted to participate in the study were first asked to confirm agreement to participate. All correspondence was conducted electronically.

The initial email invitation (see Appendix C) was to be sent to the participant by the CTCPA. The initial email contained information relating to:

- the background of the study;
- the approximate time to complete the study;

- a consent page describing that participation is voluntary and participants can withdrawal at any time without penalty, and
- assurance of confidentiality
- an incentive to participate in the form of the chance for a $50 Amazon gift certificate along with study findings;
- author's contact information for any questions; and
- a survey link to SurveyMonkey (see Appendix D).

A second follow-up email containing the same details, as the initial email was to be sent to non-respondents to again ask for participation, one week after the first request. Participant identification was not identified to the researcher as each participant will be given a numerical code and the researcher will obtain no identifying information as the CTCPA maintains the data participation pool. Data collected will be stored in a computer that only the author has access to and is password protected, data will be archived for five years after which it will be permanently deleted.

Summary

Prior studies on informal workplace learning suggest a positive relationship between workplace learning constructs and positive impact on employee engagement and performance within organizations. Recent literature seeks to measure the quantitative aspects of workplace informal learning as instruments are validated and developed. While the public accounting profession is structurally organized for informal learning to date, there has been no study to quantify the impact of informal learning within the

profession. Previous studies have concluded the importance of the hierarchical structure on learning for external audit professionals.

In this study I examined the perceived impact of auditors workplace informal learning as measured by management support, peer support, supportive organizational culture, and access to work resources, and various demographic variables the dependent variable impact is bifurcated into the impact on engagement and impact on performance based on mean answers to survey questions for each factor. In Chapter 3, I discussed the design and multiple regression methodologies based on survey response from practicing external audit professionals. The next chapter will discuss the results of the pilot study, data collection procedures, and study results.

Chapter 4: Results

The purpose of this cross sectional quantitative, survey study was to add to the audit literature by examining auditors' perceptions of informal workplace learning contexts using a perceived organizational support theoretical lens. Specifically, I studied the four aspects of informal workplace learning identified by Maringka (2013): management support, peer support, supportive organizational culture, and access to work resources. I developed Research Questions 1 through 3 to look at the relationship between external auditors' perceptions of informal learning work contexts, management support, peer support, supportive organizational culture, and access to work resources, and organizational impact as measured by engagement, performance, and engagement and performance combined into one impact variable. I developed Research Question 4 to see if there was a relationship between demographic variables gender, experience, and firm type on the dependent variable the impact of auditors' workplace informal learning. This chapter includes the results of this study separated into three sections on the pilot study, data collection, and study results.

Pilot Study

I conducted a brief initial pilot study with a sample of five practicing tax professionals so as not to overlap participants from the same sample as the study. The pilot study mirrored the proposed study and was launched 3 weeks in advance to ensure timing and accuracy of the survey instrument along with any potential questions participants may have before the entire survey was launched. I distributed the survey

instrument email request at one initial launch, and followed up with a second email 2 weeks after for nonrespondents.

There were a total of five responses to the pilot study. Based on feedback from these participants, rather than have Questions 1 through 28 included on one large screen page with mandatory responses, I broke the questions up into three pages of 10, 10, and eight questions each. This update was made in response pilot study participants comments about mandatory finishing of the question bank and confusion over moving onto the next page. The pilot group reviewed the new format, and those who had problems on the initial pilot completed the updated version. I made no other instrumentation or data analysis changes.

Data Collection

Participants were recruited via LinkedIn in July of 2017. This is not the original data collection plan outlined in Chapter 2. Details of actual collection procedures are presented here. The participant pool included practicing audit professionals whom I had as primary contacts from working in the profession. I made an initial posting to my LinkedIn wall, which had 364 connections at the time. Analytics provided by Linkedin showed 187 views of the original posting. I made a follow up posting to the same wall 2 weeks later. There was the same number of connections, and Linkedin analytics showed 124 views to the follow up posting. There were a total of 120 responses, and of those 103 were usable responses. The 17 unusable responses were either incomplete or not from the target population. Using total views, the response rate was 39%; using total connections, the response rate was 33%. The higher connection response rate is the result

of not a 1:1 preview ratio and overlap in views of the two requests. The total usable sample size of 103 was above the originally proposed 100 participants for a medium effect using four independent variables. Table 1 shows descriptive statistics for demographic data used in the study. The descriptive tables do not interpret a regression model but provide useful summaries of the datasets (see Field, 2014).

Table 1

Demographic Characteristics of Participants (N = 103)

Characteristics	*N*	%
Gender		
Female	46	45%
Male	51	50%
No response	6	6%
Average tenure (years)	7.69 Years	
Title		
Leader (partner, principal, director)	24	23%
Senior manager	6	6%
Manager	12	12%
Senior/supervisor	23	22%
Staff	32	31%
No response	6	6%
Average age (years)	33.51 Years	
Firm size		
Big Four	27	26%
16+ audit partners but not Big Four	49	48%
Less than 16 audit partners	21	20%
No response	6	6%

There was slightly more male (50%) than female (45%) participants, which reflected the general demographic differences of Connecticut based auditing professionals. Overall, six participants choose not to complete demographic information, as it was optional to help maintain anonymity. The average age of participants was 33.51 years old, with an average professional tenure of 7.69 years (tenure ranged from 35 years

to approximately 1 year). Of this, 53% of responses were from staff/seniors, and 41% were from participants in a manager and-or leadership role.

My original data collection plan called for use of the CTCPA membership pool. Because of administrative changes, the membership pool database was not available at the time of data collection. The alternate collection method maintained the original plan, but I posted an initial invitation to participate in the study on Linkedin. Participants were first asked to confirm agreement to participate, and I made a follow-up posting was 2 weeks after the initial posting. The web-link invitation included a consent page describing that participation was voluntary and participants could withdrawal at any time without penalty. Data was collected electronically through SurveyMonkey, and I downloaded the raw data for coding and analysis. To ensure anonymity of participants, email addresses were collected only for those who wanted to participate in the drawing, and demographic and contact information were optional responses. I had no access to identifying data because email addresses were separated from the initial download to complete the drawing, and were maintained in a separate file split from the question responses.

Study Results

Mean, standard deviation, and median scores were developed for each of the four independent variables and three dependent variables from responses to Likert-type scaled questions that were ordinal in scale (see Table 2). Table 2 also includes central tendency variables for the independent demographic variable tenure years. Firm size and gender were not included because they are dichotomous variables. By computing the mean of

each item to derive a continuous scale, the multiple regression assumption of measurement for each of these constructs was met. The range of possible scores for each was 1.0 to 5.0, with higher scores indicating greater perceptions and impact of informal learning at work. There was a total of 28 items to measure the four independent variables, seven questions per variable; and a total of 10 questions to measure the impact of informal learning for auditors. This variables was bifurcated into five questions each for both engagement and performance, and aggregated for the impact variable. Table 3 shows the break out of mean scores for each variable and question.

Table 2

Measures of Central Tendency for Variables

Variable	*N*	*M*	*SD*	*Mdn*	Range
Management support	103	3.874	0.694	4.00	2.00-5.00
Peer support	103	4.130	0.565	4.20	2.17-5.00
Supportive organizational culture	103	3.775	0.580	3.70	1.57-5.00
Access to work resources	103	3.891	0.565	4.00	2.00-5.00
Impact of informal learning (combined)	103	4.085	0.651	4.10	1.90-5.00
Impact of informal learning (performance)	103	4.144	0.585	4.00	2.00-5.00
Impact of informal learning (engagement)	103	4.027	0.833	4.00	1.40-5.00
Tenure years	92	7.692	8.892	4.00	1.67-35.00

Note: *N* = Number; *M* = Mean; *SD* = Standard Deviation; *Mdn* = Median; Variables used 1 = Strongly Disagree, 2 = Disagree, 3 - Neutral, 4 = Agree, 5 = Strongly Agree

Table 3

Summary of mean scores (N=103)

Variable/Statement		Mean Score	
Impact of informal learning engagment & performance			4.085
Impact of informal learning on engagment			4.144
E1	If given the opportunity, I would like to work in my organization for a long time.	3.893	
E2	Most days, I look forward to coming to work.	3.845	
E3	I would recommend my organization as a great place to work.	4.126	
E4	I am proud to be part of my organization.	4.184	
E5	I am highly engaged at my work.	4.087	
Impact of informal learning on performance			4.027
F1	I have the knowledge and skills required to perform my job well.	4.243	
F2	I am satisfied with my performance at work.	4.068	
F3	I am advancing in my career.	4.087	
F4	I exceed the performance standards for my role.	3.961	
F5	I am more employable than when I started working here.	4.359	
Management support (MS)			3.874
MS1	My supervisor assigns me with challenging tasks that support my informal learning.	3.854	
MS2	When I make a mistake, my supervisor encourages me to reflect so I can learn from it.	3.825	
MS3	When I need to update my knowledge and skills, my supervisor directs me to the appropriate learning resources.	3.777	
MS4	I ask my supervisor for help when I encounter challenges at work.	4.175	
MS5	My supervisor provides me with constructive feedback for my learning.	3.796	
MS6	My supervisor is a role model for my learning.	3.767	
MS7	My supervisor promotes the value of informal learning at work.	3.806	
Peer support (PS)			4.130
PS1	I have direct access to my peers with needed expertise when I have a work-related question.	4.447	
PS2	My peers are supportive of my informal learning.	4.146	
PS3	When faced with challenging work situations, I ask my peers for help.	4.408	
PS3	My peers are willing to share their expertise.	4.243	
PS4	My peers direct me to other relevant resources when they cannot help me with my work-related problems.	4.087	
PS5	My peers share the lessons learned from making mistakes at work.	3.718	
PS6	My peers provide me with guidance when I face challenging work situations.	3.951	

(table continues)

Table 3 cont'd

Summary of mean scores (N=103)

Variable/Statement		Mean Score	
Supportive organizational culture (SOC)			3.775
SOC1	In my organization, a mistake is tolerated as long as we learn something from it.	3.961	
SOC2	In my organization, we share lessons learned from our mistakes.	3.864	
SOC3	My organization allows risk-taking in the process of finding solutions.	3.039	
SOC4	In my organization, risk-taking is considered important for us to learn.	2.942	
SOC5	I work in an environment that supports continuous learning.	4.398	
SOC6	My company's culture creates a work environment that promotes informal learning.	4.049	
SOC7	Learning new ways to perform my job is valued in my organization.	4.087	
Access to work resources (AWR)			3.891
AWR1	I use the Internet to learn informally on the job.	4.369	
AWR2	When faced with challenging work situations, I can use the Internet to find answers.	3.942	
AWR3	I have time to learn informally on a daily basis.	3.427	
AWR4	I have time to read professional publications to stay current on topics related to my job.	3.184	
AWR5	I can use the Internet when I need to find information to help me perform my job.	4.165	
AWR6	I have time to seek information I need for my job.	3.748	
AWR7	I have access to the Internet to solve work-related problems.	4.320	

Note: Variables used 1 = Strongly Disagree, 2 = Disagree, 3 - Neutral, 4 = Agree, 5 = Strongly Agree

Table 4

Correlations Between all Variables Used in Multiple Regression Analysis

Variable	1	2	3	4	5	6	7	8	9	10
1 Peer support										
2 Management support	.758***									
3 Supportive organizational culture	.657***	.678***								
4 Access to work resources	.398***	.407***	.624***							
5 Performance	.450***	.510***	.503***	.497***						
6 Engagement	.543***	.526***	.659***	.587***	.679***					
7 Impact	.549***	.566***	.647***	.598***	.883***	.944***				
8 Gender	-0.023	-0.025	-0.129	-.261*	-0.065	-.250*	-0.186			
9 Firm size	0.045	0.041	-0.064	-0.028	-0.038	-0.078	-0.067	-0.077		
10 Tenure years	-0.124	-0.295	0.053	.239*	0.142	0.181	0.179	-0.107	-0.125	
11 Early	0.074	0.068	0.025	-0.01	0.178	0.107	0.149	-0.024	-0.026	-0.083

Note: *p<.05 (2-sided test); ***p<.001 (2-sided test), N = 103 for all variables except 8-10. Variables 8-10 N = 92.

* Correlation is significant at the 0.05 level (2-tailed).

*** Correlation is significant at the 0.001 level (2-tailed).

I performed pearson's product moment correlation to compare associations between 11 variables for hypothesis testing. Each of the independent and dependent variables from RQ 1 through 3 had a strong direct positive correlation. This indicated that when scores for the variables increased the corresponding variables also increased. In addition, gender had medium direct negative correlation with access to work resources (r = -.261, p < .05) and engagement (r = -2.50, p < .05) indicating there was an inverse relationship between gender and access to work resources and engagement. Tenure years was strongly and directly correlated with access to work resources, indicating that those with longer years worked had more access to resources such as time and technology. In addition, an additional variable of an even split of early-late respondents was included to see if there was a difference between those who responded to later requests from early responses. There was no significance noted between early and late responses. It is important to note that correlation does not equal causation (Field, 2014). Results of the correlational analysis are presented in Table 4.

The first three RQs in this study targeted the same four independent variables (management support, peer support, supportive organizational culture, and access to work resources), but the dependent variable changed for each question. Research Question 4 was addressed to various demographic variables with the same combined dependent variable impact. To quantify the predictability of relationships between these variables, I ran regression analysis. Each research question is discussed separately with the null and alternative hypothesis and a summary of assumptions and inferential analysis.

Research Question 1

What is the relationship between external auditors' perceptions of informal learning work contexts management support, peer support, supportive organizational culture, and access to work resources and organizational impact as measured by engagement?

$H_0$1: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with engagement.

H_A1: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with engagement.

A multiple regression was run to predict the dependent variable engagement on the four independent variables management support, peer support, supportive organizational culture, and access to work resources to answer research question one. In checking the assumptions there was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The scatterplot showed funneling indicating heteroscedasticity. However there was independence of residuals, as assessed by a Durbin-Watson static of 1.992 within the recommended boundaries of one to three suggesting errors are reasonably independent (Field, 2014). To address heteroscedasticity bootstrapping was performed with 95% bias corrected and accelerated

confidence intervals based on 1000 bootstrap samples. There was no evidence of multicollinearity, as assessed by variance inflation factor values less than three. There was one studentized deleted residual greater than +/- 3 standard deviations, no leverage values greater than 0, and values for Cook's distance above 1. The assumption of normality was met, as assessed by a P-P Plot.

Table 5

Summary of Multiple Regression Analysis: Dependent Variable Engagement, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

	B	*SE B*	*β*	*Sig.*
Intercept	-0.451	0.509	---	---
	(-1.471, 0.427)			
Peer support	0.119	0.187	0.082	0.540
	(-0.260, 0.404)			
Management support	0.109	0.184	0.096	0.549
	(-0.210, 0.576)			
Supportive organizational culture	0.493	0.151	0.363	0.002**
	(0.185, 0.751)			
Access to work resources	0.446	0.120	0.316	0.001**
	(0.202, 0.743)			
Model summary:				
$F = 27.008$, $p < .001$				
$N = 102$				
$R^2 = .524$				
Adjusted $R^2 = .505$				

Note: **$p<.01$; *B* = unstandardized regression coefficient; *SE*b = Standard error of the coefficient; *β* = standardized coefficient; *Sig.*=Significance

Reject null hypothesis $H_0 1$. R-values are values of multiple correlation coefficients between the predictors and the outcome. $R = 0.724$, a value between +/- 1.00 where 0 is no relationship is and 1 is a perfect fit of the data. R-square is the measure of how much of the variability in the outcome variable is accounted for by the predictors. The adjusted R-square shows how well models generalize using the population of the

sample (Field, 2014). The multiple regression model statistically significantly predicted engagement, $F(4,98 = 27.008, p < .001, R^2 = .524$ (.505 adjusted). The adjusted R-square value of .505 indicates that approximately 50.5% of the variability in the dependent variable impact of informal learning on engagement was predicted by the four independent variables in the model. The independent variables supportive organizational culture and access to work resources both added statistically significantly to the prediction, $p < .01$. The bootstrap positive values do not cross zero adding strength to the conclusion that a significant positive relationship exists. Regression coefficients, confidence intervals, and standard errors can be found in Table 5.

Research Question 2

What is the relationship between external auditors' perceptions of informal learning work contexts management support, peer support, supportive organizational culture, and access to work resources and organizational impact as measured by performance?

$H_0$2: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with performance.

H_A2: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources with performance.

A multiple regression was run to predict the dependent variable performance on the four independent variables management support, peer support, supportive

organizational culture, and access to work resources to answer research question two. In checking the assumptions there was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The scatterplot showed funneling indicating heteroscedasticity. However there was independence of residuals, as assessed by a Durbin-Watson static of 1.581 within the recommended boundaries of one to three suggesting errors are reasonably independent (Field, 2014). To address heteroscedasticity bootstrapping was performed with 95% bias corrected and accelerated confidence intervals based on 1000 bootstrap samples. There was no evidence of multicollinearity, as assessed by variance inflation factors values less than three. There were two studentized deleted residuals greater than +/- 3 standard deviations, no leverage values greater than 0, and values for Cook's distance above 1. The assumption of normality was met, as assessed by a P-P Plot.

Reject null hypothesis $H_0$2. R values are values of multiple correlation coefficients between the predictors and the outcome. $R = 0.604$, a value between +/- 1.00 where 0 is no relationship is and 1 is a perfect fit of the data. R-square is the measure of how much of the variability in the outcome variable is accounted for by the predictors. The adjusted R-square shows how well models generalize using the population of the sample (Field, 2014). The multiple regression model statistically significantly predicted performance, $F(4,97 = 13.956$, $p < .001$, $R^2 = .365$ (.339 adjusted). The adjusted R-square value of .339 indicates that approximately 33.9% of the variability in the

dependent variable impact of informal learning on performance was predicted by the four independent variables in the model. The independent variable access to work resources added statistically significantly to the prediction, $p < .01$. The bootstrap positive values do not cross zero adding strength to the conclusion that a significant positive relationship exists. Regression coefficients, confidence intervals, and standard errors can be found in Table 6.

Table 6

Summary of Multiple Regression Analysis: Dependent Variable Performance, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

Variable	*B*	*SE B*	*β*	*Sig.*
Intercept	1.758	0.367	---	---
	(0.993, 2.554)			
Peer support	0.063	0.146	0.069	0.682
	(-0.222, 0.283)			
Management support	0.221	0.129	0.301	0.093
	(-0.022, 0.518)			
Supportive organizational culture	0.080	0.102	0.091	0.429
	(-0.134, 0.304)			
Access to work resources	0.259	0.078	0.279	0.003**
	(0.095, 0.392)			
Model summary:				
$F = 13.956$, p <.001				
$N = 101$				
$R^2 = .365$				
Adjusted $R^2 = .339$				

Note: **p<.01; B = unstandardized regression coefficient; *SEb* = Standard error of the coefficient; β = standardized coefficient; *Sig.* = Significance

Research Question 3

What is the relationship between external auditors' perceptions of informal learning work contexts management support, peer support, supportive organizational

culture, and access to work resources and organizational impact as measured by performance and engagement combined?

$H_0$3: There is not a significant relationship between management support, peer support, supportive organizational culture, and access to work resources to the impact of informal learning.

H_A3: There is a significant relationship between management support, peer support, supportive organizational culture, and access to work resources to the impact of informal learning.

A multiple regression was run to predict the dependent variable impact on the four independent variables management support, peer support, supportive organizational culture, and access to work resources to answer research question three. In checking the assumptions there was linearity as assessed by partial regression plots and in checking the assumptions there was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The scatterplot showed funneling indicating heteroscedasticity. However there was independence of residuals, as assessed by a Durbin-Watson static of 1.620 within the recommended boundaries of one to three suggesting errors are reasonably independent (Field, 2014). To address heteroscedasticity bootstrapping was performed with 95% bias corrected and accelerated confidence intervals based on 1000 bootstrap samples. There was no evidence of multicollinearity, as assessed by variance inflation factor values less than three. There was two studentized deleted residuals

greater than +/- 3 standard deviations, no leverage values greater than 0., and values for Cook's distance above 1. The assumption of normality was met, as assessed by a P-P Plot.

Table 7

Summary of Multiple Regression Analysis: Dependent Variable Impact, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

	B	*SE B*	*β*	*Sig.*
Intercept	0.621	0.407	---	---
	(-0.234, 1.434)			
Peer support	0.167	0.167	0.160	0.334
	(-0.198, 0.447)			
Management support	0.135	0.147	0.160	0.353
	(-0.118, 0.511)			
Supportive organizational culture	0.269	0.103	0.265	.015*
	(0.055, 0.474)			
Access to work resources	0.328	0.068	0.309	.001**
	(0.204, 0.445)			
Model summary:				
$F = 28.1080$, p <.001				
$N = 101$				
$R^2 = .537$				
Adjusted $R^2 = .518$				

Note: *p<.05, **p<.01; *B* = unstandardized regression coefficient; *SEb* = Standard error of the coefficient; *β* = standardized coefficient; *Sig.* = Significance

Reject null hypothesis $H_0$3. *R* values are values of multiple correlation coefficients between the predictors and the outcome. $R = 0.733$, a value between +/- 1.00 where 0 is no relationship is and 1 is a perfect fit of the data. R-square is the measure of how much of the variability in the outcome variable is accounted for by the predictors. The adjusted R-square shows how well models generalize using the population of the sample (Field, 2014). The multiple regression model statistically significantly predicted impact, $F(4,97 = 28.108$, $p < .001$, $R^2 = .537$ (.518 adjusted). The adjusted R-square

value of .518 indicates that approximately 51.8% of the variability in the dependent variable impact of informal learning on performance was predicted by the four independent variables in the model. The independent variables supportive organizational culture and access to work resources added statistically significantly to the prediction, $p <$ .05 and $p < .01$, respectively. The bootstrap positive values do not cross zero adding strength to the conclusion that a significant positive relationship exists. Regression coefficients, confidence intervals, and standard errors can be found in Table 7.

Research Question 4

What is the impact of demographic variables gender, experience, and firm type on auditors' workplace informal learning?

$H_0$4: There is not a significant relationship between gender, experience, and firm type on the auditors' informal workplace learning.

H_A4: There is a significant relationship between gender, experience, firm type on the auditors' informal workplace learning.

A multiple regression was run to predict the dependent variable impact on demographic variables gender, experience, and firm type on auditors' workplace informal learning to answer research question four. There is a reduced population size of $N = 91$ for the demographic variables as answering demographic questions were option in order to help assure anonymity in responses. The population is smaller than the 100 assessed in planning for a medium effect, but there are only three independent variables so the population is deemed adequate.

In checking the assumptions there was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. Note categorical independent variables gender and firm size were ignored. There was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The scatterplot showed funneling indicating heteroscedasticity. However there was independence of residuals, as assessed by a Durbin-Watson static of 1.935 within the recommended boundaries of one to three suggesting errors are reasonably independent (Field, 2014). To address heteroscedasticity bootstrapping was performed with 95% bias corrected and accelerated confidence intervals based on 1000 bootstrap samples. There was no evidence of multicollinearity, as assessed by variance inflation factor values less than 3. There were two studentized deleted residuals greater than +/- 3 standard deviations, no leverage values greater than 0., and values for Cook's distance above 1. The assumption of normality was met, as assessed by a P-P Plot.

Reject null hypothesis $H_0$4. R values are values of multiple correlation coefficients between the predictors and the outcome. $R = 0.309$, a value between +/- 1.00 where 0 is no relationship is and 1 is a perfect fit of the data. R-square is the measure of how much of the variability in the outcome variable is accounted for by the predictors. The adjusted R-square shows how well models generalize using the population of the sample (Field, 2014). The multiple regression model statistically significantly predicted impact, $F(3,86 = 3.031$, $p = .034$, $R^2 = .096$ (.064 adjusted). The adjusted R-square value of .064 indicates that approximately 6.4% of the variability in the dependent variable

impact of informal learning was predicted by the three independent demographic variables in the model. The independent variable firm size, big four or non big four added statistically significantly to the prediction, $p < .05$. While there was significance in the model it is important to not that the R-square value is very low so the model has less significance in predictability. The bootstrap positive values do not cross zero adding strength to the conclusion that a significant positive relationship exists. Regression coefficients, confidence intervals, and standard errors can be found in Table 8.

Table 8

Summary of Multiple Regression Analysis (Demographics): Dependent Variable Impact, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors based on 1000 bootstrap samples

	B	*SE B*	*β*	*Sig.*
Intercept	4.157	0.096	---	---
	(3.927, 4.354)			
Gender	-0.202	0.117	-0.175	0.091
	(-0.447, 0.029)			
Tenure	-0.175	0.110	-0.137	0.115
	(-0.374, 0.012)			
Firm size	0.013	0.006	0.194	0.044*
	(0.001, 0.025)			
Model summary:				
F =3.031, p =0.034				
N = 89				
R^2 = .096				
Adjusted R^2 = .064				

Note: *p<.05; *B* = unstandardized regression coefficient; *SEb* = Standard error of the coefficient; *β* = standardized coefficient; *Sig.* = Significance

Summary

In Chapter 4, I discussed the results from four separate multiple regressions run to predict the perceived impact of auditors workplace informal learning as measured by management support, peer support, supportive organizational culture, and access to work

resources, and various demographic variables. The dependent variable impact measured and also bifurcated into the impact on engagement and impact on performance based on mean answers to survey questions for each factor. The chapter began with a description of population and demographic findings from the survey results.

Each of the four multiple regression models statistically significantly predicted the dependent variables. The independent variables supportive organizational culture and access to work resources added statistically sufficiently to the dependent variables engagement and impact. The independent variable access to work resources added statistically sufficiently to the dependent variable performance. Therefore the answers to each of the research questions are yes. The fourth multiple regression model statistically significantly predicted the dependent variable impact on demographic firm type, big four or non-big four on auditors' workplace informal learning. The next chapter will discuss the finding interpretations and implications for further research.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this cross-sectional quantitative, survey study was to examine the impact of auditing professionals' perceptions of informal workplace learning contexts using a perceived organizational support theoretical lens. Specifically, the four aspects of informal workplace learning identified by Maringka (2013) were examined. The design of this study was a quantitative multiple regression analysis of the perceived impact of informal learning on the external audit profession. Previously, informal learning was hard to measure in an organizational context, but researchers have recently developed a variety of instruments to identify and measure conditions and outcomes for informal learning, taking into account the complex nature of the learning (Cerasoli et al., 2017). A key finding is that access to work resources is significantly positively related to impact and remains consistent when the dependent variable impact is bifurcated into engagement and performance. In addition a supportive organizational culture has a positive significant relationship to engagement and impact variables. Also firm size, Big Four or non-Big Four, impacts auditor informal learning.

Interpretation of Findings

In this section, I discuss key findings that confirm, disconfirm, and-or extend the literature on auditing professionals and workplace informal learning. While the variable peer support has been significant in previous literature, it was not in this study. Kadous et al. (2013) and De Grip (2015) found positive relationships between peer supports using human capital theory. Schaefer's (2013) findings conflicted those in these two studies. Specifically, Schaefer found that audit seniors in Big Four firms are less likely to seek

peer support because of social costs. Results of this study are not significant for peer support for any of the dependent variables, nor are there any correlations between peer support and firm size. This indicates that auditors are less likely to seek peer support regardless of firm size.

Auditing firms depend on the workpaper review process to provide supervisor review and feedback to less experienced auditors. Interpreted through a knowledge dispersion process theory, learning in this way relies on the feedback process; the quality and amount of feedback depends on the reviewer and learning environment (Dalton & Viator, 2013). Inadequate supervisory feedback environments relate to less organizational commitment, but mentoring can mitigate the adverse effects (Dalton & Viator, 2013). While audit seniors have been found to seek knowledge upwardly (Schaefer, 2013), the importance of performance feedback to developing and improving auditors' knowledge and thus audit quality has also been confirmed by previous researchers (Andiola, 2014).

Managers acquire skillsets through informal learning, but they still need a balance between formal and informal learning from an individual employee perspective (Becker & Bish, 2017). Billett and Choy (2013) asserted the importance of quality and sequencing of work experiences through guided learning from more experienced workers. In contrast to Marignka (2013), I found that a significant positive relationship did not exist between management support and informal learning as measured by any of the dependent variables. Prior studies showed that high-quality supervisor support relationships are positively related to feedback-seeking behavior (Anseel et al., 2015).

While my findings did not confirm the relationship of management support and any of the dependent variables, the quality and sequencing of the relationship and feedback process were not measured. In the next sections, I discuss the variables that were significant in this study, focusing on how they confirm, disconfirm, and extend the informal workplace learning literature.

Access to Work Resources

Access to work resources including time and technology was significant in relation to engagement, performance, and impact. As organizations move towards globalization, responsibilities in organizations are shifting from the company to the individual (Forbes insights, 2015; Morgan, 1997). To date, there is little research on work resources and informal learning. Maringka (2013) found no significant relationships between access to work resources and impact of informal workplace learning as measured by both engagement and performance in a general business setting. This study filled the literature gap given the findings that access to work resources was significant in all models, on impact and the disaggregated engagement and performance variables for audit professionals. Wahab et al. (2016) asserted that lack of time is a key reason accountants would not participate in informal learning activities, but Lindsay (2012) offered a contradictory view by asserting accountants want to learn for themselves and are self-motivated to do so. I did not measure time and technology separately.

Supportive Organizational Culture

Supportive organizational culture was significant in relation to impact and the disaggregated variable engagement. This is consistent with Watkins and Cervero (2000)

findings that public accounting firms foster "a strong culture of learning and support for learning" (p. 3). Maringka (2013) found no significant relationship between supportive organizational and engagement, but did find one between performance and engagement in a general business population. Eruat (2004), Caruso (2017), and Wahab et al. (2016) also confirmed Maringka's results regarding supportive organization culture and performance, the inverse of the results of this study. Also of note, Liliana et al. (2013) found a difference in organizational culture when looking at Big Four and non-Big Four demographic variables: such differences were also evident in my study. Specifically, I found gender variances in access to work resources in regards to demographic correlations only. Gender did not have any significance in any of the multiple regression models.

Limitations of the Study

In this study, I looked to measure the impact of informal learning in the auditing profession at the level individual employee perception level. The approach was consistent with prior studies, but involved some limitations. I was a former auditing professional, but this experience did not interfere with the empirical results because I included all usable responses and excluded only responses from non-audit professionals and incomplete responses. Time and resource constraints in conducting this study were limited as the questionnaire took on average 6 minutes 37 seconds to complete.

Constraints also include instrument limitations including the self-reported nature of the questionnaire; some participants may have misinterpreted the questions. Another constraint was that I limited participants to practitioners working in the state of

Connecticut. Splitting the responses of those who responded early and those who responded late, I subsequently looked at a non-response bias for members who did not respond. No non-response bias was noted. Prior research on informal learning has mixed results and the impact had not yet been measured in the accounting literature, so a quantitative informal learning study is new to this specific professional population.

Recommendations

Recommendations for future studies include testing the instrument in other geographical areas to look for consistency across locations. Another recommendation includes testing the instrument in the internal audit population to identify differences between internal and external auditors. The internal auditing profession has a different organizational construct. In addition, as the access to work resources variable was consistently significant across all models, future researchers could look into the possibility of bifurcating this variable to see if there are any variances within the variable for either time or technology. Also of note, this is the only variable that has a strongly negative correlation to gender, so in further analysis this could be looked at.

Additional researchers could also extend the frequency variable that had previously showed low internal consistency (Marinka, 2013), aggregating a count of the hours auditing professionals spend on informal learning activities. Lindsay (2013) looked at continuing professional development (CPD) in an output-based environment in England and Wales. A study looking at the time United States-based practitioners who are still in an input based model of time spent in formal learning is warranted. For United

States practitioners', informal learning activities are not required of them nor are they counted for continuing education credit.

Another recommendation is to look at the relationship between informal learning and innovation. Current researchers such as Marodin, Waterhouse, and Malik (2017) have outlined a framework to recognize workplace informal learning and its role in innovation, be it big or small. Innovation is the competitive advantage to promote adaptability in 21st century organizations (Fu, 2014).

Implications

This study makes a unique contribution to the auditing and human resource management literature and provides a foundation for future research that can help better understand the impact of informal learning on the audit profession. I addressed the literature gap on the impact of learning opportunities in an audit setting where there are rapid and continual changes and learning is heavily relied upon to diffuse knowledge and skills in a highly knowledge based environment. This study advances the literature of informal learning with a focus on the individual from a perceived organizational support theoretical lens with a cross sectional quantitative study in a defined learning environment, and learning opportunities. There is a variety of on the job or informal learning that takes place in the audit profession; advances in this area benefit practice include opening the black box of learning patterns in the public accounting profession.

The foundation of positive social change in the auditing profession begins with an understanding of skill acquisitions, a form of learning necessary for organizational performance. The first meta-analysis on informal learning confirmed the positive

association between engaging in informal learning activities and knowledge-skill acquisition and performance (Cerasoli et al., 2017). The audit function ensures compliance with accounting rules and auditors are expected to be professionally competent to provide their services to help ensure accurate accounting data and reports. Understanding the impact of auditors' informal workplace learning will help in better meeting financial statement stakeholders demands for stronger financial reporting oversight for promoting positive social change.

Skills professionals had previously been educated for may no longer fit the current market, as technology is rapidly changing job expectations. After the stock market crash of 1929, financial irregularities of the early 2000s, and again after the financial crisis of 2008, financial statement stakeholders began demanding more transparency in financial reporting and the auditing profession. There were increased signs of a loss of confidence in the accounting profession; highlighted by well-publicized scandals where highly esteemed professionals misused their professional autonomy (Schön, 1983). In order to perform these services auditors need to keep current with the changing expectations and technology changes to provide financial statement stakeholders with accurate financial reports with the transparency stakeholders are requesting. After financial statement stakeholders lost faith in the profession, it was up to professionals to meet current market demands and update their own competencies.

In this study the impact of informal learning activities that help auditors stay current on evolving expectations day to day was looked at. Access to work resources including time and technology were significant in each model in relation to impact and its

subcomponents engagement and performance. This would infer that having access to the resources necessary to stay current have a positive impact in the accounting profession. In addition supportive organizational culture significantly related to the engagement and impact variables. The firm culture that one works in engages them in their job, consistent with Caruso (2017) and Wahab et al. (2016). Also that big four and non-big four firms have a different impact on informal learning experiences from an employee perspective.

While informal learning is an important component to practicing auditors evolution, it is not an either or proposition in contract to formal learning. Billett (2013) stresses that participating in informal learning activities alone may not be sufficient to sustain knowledge acquisition as bad traits can be reinforced, a known negative effect of informal learning. Consistent with Schön (1983), reinforcement of the learning of ineffective behaviors is a downfall of workplace learning, on the job learning through trial and error and self-reinforcement methods. New knowledge is not solely created through everyday experiences, but is rather a complex mix of experiences both formal and informal.

Conclusions

Changes in the workplace are rapid and continual which creates challenges for traditional formal learning. Auditing professionals have a strong motivation to stay current with change. In order to stay current with ever changing 21st century job expectations, access to work resources such as time and technology is consistently significant in relation to impact and subcomponents of impact performance and engagement. In this study I worked to fill the literature gap on the impact of informal

learning on the auditing profession; where rapid and continual change and learning is heavily relied upon to diffuse knowledge and skills in a highly knowledge based environment. Better-qualified auditors can help businesses achieve a stronger auditing oversight system keeping up with ever changing stakeholders' expectation. The accounting profession is in a period of innovation that requires professionals of all levels to adopt to keep pace with the quickly changing globalized organization. Understanding the impact of auditors' informal workplace learning helps to better meet financial statement stakeholders demands for stronger financial reporting oversight for promoting positive social change.

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Appendix A
Instrument Use Approval

Michelle Kusaila <michelle.kusaila@waldenu.edu>

Request for use of Instrument
3 messages

Michelle Kusaila <michelle.kusaila@waldenu.edu> Mon, Apr 18, 2016 at 9:50 AM
To: jane.maringka@gmail.com

Dear Dr. Maringka

I am a doctoral student writing my dissertation tentatively titled Informal learning: How auditors develop proficiency under the direction of my dissertation committee chaired by Dr. Prinster.

I would like your permission to reproduce to use your dissertation instrument to assess employees' perceptions of informal learning in my research study. I will be using this instrument in a public accounting setting. I would like to use and print your survey under the following conditions:

- I will use this survey only for my research study and will not sell or use it with any compensated activities.
- I will include the copyright statement on all copies of the instrument.
- I will send my research study and one copy of reports, articles, and the like that make use of these survey data promptly to your attention.

If these are acceptable terms and conditions, please indicate so by responding to me via email: michelle.kusaila@waldenu.edu

Sincerely,

Michelle M. Kusaila

Doctoral Candidate

Expected date of completion: Early 2017 - Hopefully

Jane Maringka <jane.maringka@gmail.com> Wed, Apr 20, 2016 at 4:20 AM
To: Michelle Kusaila <michelle.kusaila@waldenu.edu>

Hi Michelle:

I accept your conditions and you may use my instrument for your dissertation research.

It would be interesting to see if your findings provide validation to my instrument as it has been my wish for future researchers to continue the exploration.

I wish you all the best (you are very close!) and I look forward to reading your report

Thanks,

Jane F Maringka
https://au.linkedin.com/in/jfmaringka | (M) +61424620126 | jane.maringka@gmail.com
[Quoted text hidden]

Michelle Kusaila <michelle.kusaila@waldenu.edu> Wed, Apr 20, 2016 at 9:34 AM
To: Jane Maringka <jane.maringka@gmail.com>

Thank you very much. I will send along once the process is complete.

Regards,
Michelle Kusaila
[Quoted text hidden]

Appendix B
Email Invitation

Your input is requested for a doctoral dissertation study on informal learning and its impact at work. The study, co-sponsored by Walden University, aims to gather information about informal learning, particularly how informal learning at work can be encouraged and facilitated. This study is the first attempt in the public accounting profession to quantitatively measure the informal learning environment.

The survey should take less than 15 minutes to complete. In appreciation for your survey completion, you will:

- Receive a free summary of the results
- Be entered into random drawings for an opportunity to win one of three Amazon $50 gift cards

For your reference, attached is a one-page statement of consent that describes this study and provides information about your involvement. Feel free to print a copy of this document for your personal records and read it carefully before making a decision to participate. If you have any questions, you may contact me.

To complete the survey, please click on the link below:
Start the survey now.

If you have colleagues who may be interested in participating in this study, please forward this message.

Your contribution to this study is significant, and I thank you for your assistance with my doctoral research.

Appendix C

Informal Learning Work Context Survey

Hello,

Thank you for participating in this survey. There are 47 questions, which should take you less than 15 minutes to answer.

Informal learning is defined as learning activities that happen outside of pre-established or structured learning programs.

This survey is designed to capture your perceptions of the informal learning environment and its impact for you at work.

Please fill out all of the questions. Your answers will remain confidential.

By clicking on the "start survey" button below, you are indicating that you agree to the following:

1. I have read the attached statement of consent and agree to participate in this study.
2. I am at least 18 years old.

The following questions ask about your perceptions of informal learning work contexts.

Informal learning is defined as learning activities that happen outside of pre-established or structured learning programs.

Based on this definition, please select the answers that best fit you.

Items on Informal Learning – Work Contexts

Please answer each of the following questions using:
1: Strongly Agree
2: Agree
3: Neutral
4: Disagree
5: Strongly Disagree

1. I have direct access to my peers with needed expertise when I have a work-related question.
2. I use the Internet to learn informally on the job.
3. In my organization, a mistake is tolerated as long as we learn something from it.
4. My peers are supportive of my informal learning.
5. In my organization, we share lessons learned from our mistakes.
6. When faced with challenging work situations, I can use the Internet to find answers.
7. When faced with challenging work situations, I ask my peers for help.
8. I have time to learn informally on a daily basis.
9. I have time to read professional publications to stay current on topics related to my job.
10. My organization allows risk-taking in the process of finding solutions.
11. In my organization, risk-taking is considered important for us to learn.
12. My supervisor assigns me with challenging tasks that support my informal learning.
13. My peers are willing to share their expertise.
14. My peers direct me to other relevant resources when they cannot help me with my work-related problems.
15. I work in an environment that supports continuous learning.
16. When I make a mistake, my supervisor encourages me to reflect so I can learn from it.
17. My peers share the lessons learned from making mistakes at work.
18. When I need to update my knowledge and skills, my supervisor directs me to the appropriate learning resources.
19. I can use the Internet when I need to find information to help me perform my job.
20. My company's culture creates a work environment that promotes informal learning.
21. I ask my supervisor for help when I encounter challenges at work.
22. My peers provide me with guidance when I face challenging work situations.
23. I have time to seek information I need for my job.
24. My supervisor provides me with constructive feedback for my learning.
25. I have access to the Internet to solve work-related problems.
26. My supervisor is a role model for my learning.
27. Learning new ways to perform my job is valued in my organization.
28. My supervisor promotes the value of informal learning at work.

Please click "submit" to go to the next page.

Items on Frequency of Informal Learning

The following questions assess the frequency of your participation in informal learning activities.

29. In learning about something new on the job, approximately how many hours per MONTH do you:

A. Talk with others (e.g., your boss, your coworkers, your peers)
B. Collaborate with others (e.g., your boss, your coworkers, your peers)
C. Observe others (e.g., your boss, your coworkers, your peers)
D. Share materials and resources with others (e.g., your boss, your coworkers, your peers)
E. Search the Internet
F. Read professional publications
G. Try different ways to solve a problem (trial and error)

Items on Impact of Informal Learning

Please answer each of the following questions using:
1: Strongly Agree
2: Agree
3: Neutral
4: Disagree
5: Strongly Disagree

30. I have the knowledge and skills required to perform my job well.
31. I am satisfied with my performance at work.
32. I am advancing in my career.
33. I exceed the performance standards for my role.
34. I am more employable than when I started working here.
35. If given the opportunity, I would like to work in my organization for a long time.
36. Most days, I look forward to coming to work.
37. I would recommend my organization as a great place to work.
38. I am proud to be part of my organization.
39. I am highly engaged at my work.

Demographic Questions

40. How old are you? _____ Years

41. Are you male or female? Male ( ) Female ( )

42. How long have you worked in a professional accounting firm?
Years:
And Months:

43. Which of the following describes your audit firm?
Big four ( )
0-5 audit partners ( )
6-15 audit partners ( )
16+ audit partners but not Big Four ( )

44. What is your primary work area?
Audit ( )
Tax ( )
Internal Audit ( )
Consulting ( )
Financial Accounting ( )
Other ( )

45. My current job title is:
Intern
Staff
Senior/Supervisor
Manager
Senior Manager
Leader (partner, principal, director)

46. What educational and professional designations do you have (check all that apply):
Certified public accountant
Certified Internal Auditor
Undergraduate business/accountancy degree
Accounting masters degree
Non-accounting masters degree
Other (Please specify)

47. Follow up - Email