The Future of Auditing

A Qualitative Study of the Swedish Audit Profession in a Digital World
Abstract

**Background** – As we live in a more digitized world, technological advancements have already taken place and have reshaped many different industries. One of these industries is the audit profession, which is a profession where the digitalization can contribute immensely. The digitalization is an ongoing process within the field of audit and have resulted in improved tools and more efficient auditing. However, new emerging risks, such as IT-risks, have progressed along the digitalization.

**Purpose** – The purpose of this study is to explore how the digitalization affects the auditing in Sweden, and more precise, how it affects the audit process and the risk that emerges from the digitalization. Furthermore, the study will examine if there are any perceived differences among small and big audit firms in the concept of digitalization.

**Method** – The Delphi method has been used to gather the primary data needed for the study. Practitioners from both the Big 4-firms and the smaller firms have been selected to take part of the study as experts by participating in a brainstorming session and by answering a questionnaire. This classification of the firms will be the two panels of experts within the study.

**Conclusion** – The results indicates that the perception of digitalization of the audit process and the audit risks within the Big 4-firms and the smaller firms are somewhat alike but not ultimately. The two panels agree that the effects of the digitalization have been substantial and that the auditing in the future will be even more efficient. Regarding the risks the panels have more differentiated opinions, where the second panel, consisting of the smaller firms, believes that the digitalization has affected the risks to a larger extent than the first panel. As this thesis aimed to investigate, there is indeed a perceived difference among the Big 4-firms and the smaller firms regarding the digitalization effect on the audit process, although not a substantial one.
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1. Introduction

The introductory chapter will provide a background to the research as well as a problem discussion which the study is based upon. Furthermore, the study’s purpose and the research questions will be presented.

1.1 Background

The aim of auditing has been to make an independent audit review of a business, which in turn shall give quality assured information for strategic and economic decisions for the business’s external stakeholders (Bierstaker, Burnaby, & Thibodeau, 2001). Due to the effect that auditing has on the business stakeholders, it implies that auditing plays an important and central role in the society because it plays a key-role in the economy (Sevenius, 2019). However, with the enhancements that the digitalization has brought in fast progression, the risk of fraudulent behavior due to the digitalization have progressed with it. The risk of fraudulent behavior in turn led to the many scandals in 2000s, such as Enron (2001), WorldCom (2002) and especially Lehman Brothers (2008) (Sonu, Ahn, & Choi, 2017). The audit profession was considerably damaged after these audit and accounting scandals. The consequences of these scandals resulted in many bankruptcies and large financial values were lost, which especially affected investors but also many other shareholders, such as the public who were affected by the following regression. The consequences did not only result in economic decline but also the trustworthiness of the auditor, the auditor independence and the audit quality were questioned (Allen & Carletti, 2010; Carcello, Hermanson, & Raghunandan, 2005). Since it is the auditors responsibility to review the financial statements of the company, it was a big setback to the auditors and on the whole field itself (Sonu et al., 2017). The legitimacy theory plays an important role for all companies, including the audit firms. As any other firm, the audit firms want the society to perceive them and their actions as legit and proper, which became harder after the setback due to the financial crisis (Suchman, 1995).
In order to adapt to the prominent digitalization and following the decreased trust in the auditor and the audit, the need to revise and renew legislation were recognized (Kempe, 2013). The European Union (EU) chose to amend an already existing directive, 2006/43/EC to a new one, 2014/56/EU. The old directive had rules regarding, for example, the independence of an auditor, the objectivity and the professional ethics required for an audit. However, the EU felt a need to update and reinforce the credibility of the existing directive due to the significant public relevance in public-interest companies and to revise the effects of the digitalization (European Parliament & Council of the European Union, 2014). In addition, the directive, in order to protect the investors further, was to increase the power of the national oversight authorities whose purpose is to review the work of an auditor (European Parliament & Council of the European Union, 2014).

In Sweden, both a national Law, “Revisorslagen” as well as an oversight board, “Revisorsinspektionen”, exists. The aspiration of the law is to scope the audit within the frames of the existing framework (Revisorslag, 2001:883). The purpose of “Revisorsinspektionen” is to review that the work of the of the auditor is executed correctly, and that the independence is upheld (Revisionsinspektionen, n.d.). The need to change and improve existing laws and EU directives came as a ricochet from the digitalization and the new risks that the digitalization enables (Han, Rezaee, Xue, & Zhang, 2016). Furthermore, the Swedish law “Aktiebolagslagen” (ABL), also dictates laws and rules that both the auditor and the company should follow. The law dictates for example which companies that are required to have an auditor and what the auditor should do (Aktiebolagslag, 2005:551).

It was not until the 1980s that automated techniques and digital utensils was introduced within the field of audit (Shumate & Brooks, 2001). It was already anticipated that the audit profession would be dependent on the digitalization, and it was predicted that the audit tasks would be carried out digitally and the supporting documents and audit evidence would be stored in a digital way. Initially, the audit process was based on papers, but one term that arose at that time was Paperless audit, which is used to describe the automatizations effect on the audit process (Bierstaker et al., 2001; Shumate & Brooks,
The term, “paperless audit”, arose to explain the auditing when it is based on the electronic records of a customer rather than on papers (Schiff, 1989).

1.2 Problem definition

As we live in a more digitized world, technological advancements have already taken place and have reshaped many different industries (Kuusisto, 2017). One of these industries is the audit profession, which is a profession where the digitalization can contribute immensely (Lombardi, Bloch, & Vasarhelyi, 2014). Despite this, Lombardi, Bloch & Vasarhelyi (2015) claims that the usage of the digitalization within the audit profession has failed to reach its maximum benefit because the incorporation of technology has not yet been enough. However, even though Lombardi et al.’s (2015) conclusion, the technological advancements have already made the auditing more efficient and more productive, where massive amounts of data can be processed, new software’s allowing in-depth analysis has come forth and the efficiency has increased (Han et al., 2016). This has also led to new risks emerging and it is probable that new risks will emerge along with the digitalization (Dzuranin & Malaescu, 2016).

Previous research has found that the required technology to implement a digitalized working approach has been available for the audit sector, but the reason why the implementation has been delayed is due to the cost (Hunton & Rose, 2010; Lombardi et al., 2015). In addition, existing research also describes both the positive and negative impacts of digitalization within the audit profession. Researchers like Alles (2015), Hunton & Rose (2010) and Lombardi et al. (2015), have noted that the audit profession needs to advance in order to preserve the valuable and relevant service they provide for users of financial statements. The positive aspects of the digitalization, according to Raphael (2017), are not only the increasing quality and effectiveness but also the value creation for clients that results from them taking part of valuable and relevant information.

Ali, Khan, & Vasilakos (2015), Han et al. (2016) and Kempe (2013), are some of the research studying the negative aspects of the digitalization in the audit profession. As the audit is more digitized, Kempe (2013) assert that there is a risk for tampering and manipulation of digital evidence for the audit. Ali et al. (2015), claims that there is a so-
called a security risk when sharing a company's sensitive information, which can result in manipulation of that information which Kempe (2013) implied and which can affect the detection risk. Other negative aspects that Kempe (2013) implies, is that the knowledge on information systems among auditors is insufficient, which can result in the risk of manipulation of documents that the author emphasized as well. This is in line with what Ali et al. (2015) highlighted in their study.

As the auditing is in a transition period, Kempe (2013) enlightens that the industry is on the verge of future changes that will revolutionize the whole field. Therefore, this study is focused towards the digitalization’s effect on the audit process, to investigate and enlighten probable future effects on the auditing and the risks that follows. This is a relevant and timely subject that is of high interest of many researchers and practitioners, where many different studies touch the subject of digitalization and auditing, such as; the role of IT-auditors (Barta, 2018), the role of artificial intelligence (Bizarro & Dorian, 2017), evolution of the auditing through a traditional approach (Byrnes, Awadhi, Gullvist, Liburd, Teeter, Warren Jr. & Vasarhelyi, 2018) and the association between information technology and audit risks (Han et al., 2016). However, previous studies have not investigated how the digitalization effect on the audit process is perceived by practitioners from large and small audit firms in Sweden, which became the topic of the study. This knowledge gap resulted in the purpose of the study as well as the orientation. By getting a deeper understanding on how the digitalization affects the audit process, a clearer picture of how the auditing profession will look like in Sweden due to the digitalization can be achieved.

1.3 Purpose

The problem and background discussion imply that there is an on-going digitalization that not only effects the society as a whole, but also the audit profession. The purpose of this

1 The big 4 firms (Ernst & Young, Deloitte, KPMG and PWC) are in this thesis considered large audit firms, these are the largest international audit firms existing in present day. The rest of the audit firms are in this thesis considered small.
study is to explore how the digitalization affects the auditing in Sweden, and more precise, how it affects the audit process and the risk that emerges from the digitalization. Furthermore, the study will examine if there are any perceived differences among small and big audit firms in the concept of digitalization.
Chapter 2. Literature Review and Theoretical Framework

The purpose of this chapter is to provide a deeper understanding within the subject by presenting previous research on the digitalization’s effect on auditing as well as other relevant areas. Furthermore, explanations of relevant theories and information regarding the topic of the study will be presented.

2.1 Auditing in the Future

Today, the audit is in a transition period from the traditional audit based on papers towards a more digitized audit with automated and paperless processes (Lombardi et al., 2014; Wagner, 2016). Kempe (2013) states that the industry is on the verge for future changes that will revolutionize the whole field. Furthermore, Byrnes et al. (2018, p.285) emphasize that the audit profession is at a critical juncture, saying “advances in information technology in conjunction with real-time approaches to conducting business are challenging the auditing profession”. Therefore, Barta (2018), Chou, (2015), Han et al. (2016) and Lombardi et al. (2014) asserts that the focus of the audit and the audit process will shift even more towards the areas associated with higher risk. With the shift of focus along with the automatization, more time has been freed in the audit process due to that simpler tasks are not material anymore and that is why more time can be spent on areas with higher risk (Chan & Vasarhelyi, 2011; Lombardi et al., 2014; Pascal & Dorian, 2017). Furthermore, Kempe (2013) also indicates that with the less time needed for certain tasks, the Big 4-audit firms strive to offer more consulting in order to expand their businesses.

Byrnes et al. (2018) argues that the current automated tools within the audit is not sufficient, since they cannot operate on a regular basis. The study calls for even more advanced programs which could provide an even higher level of assurance, containing functionalities resembling the audit in the future. The authors further explain that these more advanced programs can capture and confront issues such as fraud and errors, which
constitutes the detection risk within the audit risk, and ultimately lower these risks (Byrnes et al., 2018).

As highlighted before, the auditor lack sufficient knowledge to mitigate the IT-risks embedded in the new digitized audit (Barta, 2018; Chou, 2015; Han et al., 2016), knowledge which needs to be improved along with the new computer programs (Byrnes et al., 2018). Along with the advancements in the IT-tools for the auditors, which can assist in optimizing the auditing by analyzing financial data regularly (Byrnes et al., 2018), the field will get more advanced (Krafft & Kempe, 2016). Wagner (2016) accentuates that this will lead to a more risk-focused and automated work in the future. This corresponds to what Barta (2018), Chou (2015) Han et al. (2016) and Lombardi et al. (2014) argues, that the focus will be towards areas with higher risk. The future of audit is not a recent topic, according to Byrnes et al. (2018), and new strategies and methodologies are already proposed to make the future of audit even more efficient.

### 2.2 Digitalization

Traditionally, all types of audit were based on papers and no help of modern software and paperless systems were accessible (Shumate & Brooks, 2001). However, according to Bierstaker et al. (2001), the digitalization has affected the audit profession for a long time. Furthermore, Bierstaker et al. (2001) explained that already by the millennium the digitalization has affected the audit to such extent that IT-systems were a presumption to carry out the audit. This was a presumption around the globe were auditing was carried out, including Sweden. Many technologies have been fundamental in the progression of the digitalization, but one technology, which have made a huge impact in later years, is Artificial Intelligence (AI) (Bierstaker et al., 2001). AI has, according to Pascal & Dorian (2017), made an impact on the workload and efficiencies even though it is not considered to be mainstream yet. The authors emphasize that the advantages of AI will be an immense contributor in the future for businesses and IT audit.

Previous research has shown many different perspectives of the effect that digitalization has on the auditing, both from a negative as well as a positive perspective (Ali et al., 2015; Han et al., 2016; Kempe, 2013). Even though the outcome of the studies has considered
both the bad and good effects respectively, one common denominator is that there has
indeed been an effect on the audit due to digitalization. Many researchers, such as
Bierstaker et al. (2001), Chan & Vasarhelyi (2011), Lombardi et al. (2015) and Manson,
Mccartney, & Sherer (2001), accentuates that due to the digitalization, the usage of IT-
systems has increased both the effectiveness as well as the efficiency. Since auditing is a
global practice, the IT-systems affected auditing on a global scale and since Sweden
stands as a leader in the use of technology, Sweden in particular was affected (OECD,
2018). Thanks to more effective and efficient systems, more time can be spent on analysis
and other audit procedures in the audit process, because the simpler tasks are not as time
consuming as they have been (Han et al., 2016; Janvrin, Bierstaker, & Lowe, 2008;
Lombardi et al., 2015). Because of the effectiveness that the audit tools bring, more time
can also be spent on assuring quality audits through the increased means to manage and
analyze an extensive amount of data (Pascal & Dorian, 2017).

Although Han et al. (2016) enlightens the good effects that the digitalization brings forth,
the authors see the digitalization more like a double-edged sword, with the positive effects
on one side and the negative effects on the other. Han et al. (2016) apprises that previous
research has identified many risks linked to the digitalization of the audit and audit
process. Such risks entail the chance of exposure, manipulation and counterfeiting of
digital documents. Even though these risks are already present, these risks only evolve
along with the digitalization (Dzuranin & Malaescu, 2016). As Han et al. (2016),
Dzuranin & Malaescu (2016), and Lombardi et al. (2015) argues, there are risks entailed
with the digitalization, and therefore, it is crucial to adapt with the digitalization. Chan,
Chiu, & Miklos (2018, p.285) says that;

“Given that recent developments and technologies facilitated a movement away from the
historical paradigm and toward a more proactive approach, it is essential that auditors
understand what the future audit entails and how they might begin to envision a logical
progression to such a state”.

Furthermore, Lombardi et al. (2015) entails that the business environment has evolved
faster than the audit profession, because information about certain events are captured
right away and that certain markets can even react and update the real-time information.
The study of Lombardi et al. (2015) continues by stating that the financial information that auditing brings forth is not as relevant as it used to be for the stakeholders. This is the case as news regarding different companies are easily accessed through social media and other news platforms, so investors can read about product quality and other relevant information in a timely manner (Lombardi et al., 2015). Furthermore, Lombardi et al. (2015), states that it is crucial for auditors to adapt and be properly trained to handle the new challenges associated with the digitalization, and to learn how to incorporate massive amount of data to keep up with the evolvement of other markets.

As previously mentioned, there are risks entitled with the digitalization, such as the increased risk of manipulated documents. However, easier methods of sharing data of the audit process can also be seen as an advantage towards the auditing. One advantage that is mentioned is the sharing of documents within the audit firm but also when sharing documents with the clients, which increases the productivity (Chang, Chen, Duh, & Li, 2011). In order to minimize the risk related to the IT advancements, Dickson (2007) emphasize that integrated control mechanisms can be used to lower the risk, but as the knowledge of IT-systems are too low within the audit profession, it is easier said than done (Dzuranin & Malaescu, 2016). Therefore, IT-auditors has begun to be more relevant, auditors which expertise are within the IT-systems (Barta, 2018). Janvrin et al. (2008) emphasize that although the knowledge of IT-systems is too low, the usage of IT-auditors in small audit firms is not sufficient enough, which can originate in the firms’ resources.

2.3 Audit theories through an audit perspective

Auditing plays an important role in the market economy and has gained more importance in the society, an importance that is only expected to grow (Carrington, 2014). Auditing builds upon the agent theory and the legitimacy theory with the aim to execute the audits in an effective and sustainable way (Franzel, 2016), and to mitigate information asymmetry (Basu, Elder, & Onsi, 2012).
2.3.1 **Agent Theory and Legitimacy Theory**

Within research, the agent theory is described through an audit perspective as the relationship between two parties, the principal and the agent, who enters a contract with each other (Jensen & Meckling, 1976). The principal, who is the owner, gives the auditor, who acts like a control mechanism (Mihret, 2014), the responsibility to supervise the agent, who is the board of the company. Besides supervising the board and acting like an independent inspector, Frostensson (2015) and Carrington (2014) assert that the auditor shall also review and assure that the information that is disclosed is accurate. In other words, the auditor acts as an independent actor with the purpose to reduce the information asymmetry that exists between the agent and the principal (Carrington, 2014; Ho & Wang, 2013; Minnis, 2011). The studies of Ho & Wang (2013) and Minnis (2011) shows that an auditor can therefore be the solution to the problem that is actualized within the theory regarding the agent and the principal.

The legitimacy theory provides and explanation for how companies continuously strive to work in such a way that they are perceived by the public to follow the laws and norms of the society (Power, 2003). Taylor, Maliah, & Sheahan (2001) depicts the legitimacy theory as an implicit contract that exists between the organization and society, where the organization, if they satisfy specific societal needs, such as norms, are permitted to continue their operations. A somewhat broader definition was laid out by Suchman (1995, p.574), who explained the legitimacy theory as “*a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions*”.

The definition of Suchman (1995), describes an interplay between an organization and its external stakeholders where the legitimacy is obtained objectively by the external parts but is created subjectively by the organization itself. This is aligned with what Taylor et al. (2001, p.414) says, that “*under the legitimacy theory, the aim of an enterprise is to legitimize its behavior by managing the perceptions of its constituencies*”. Where the constituencies can be the external stakeholders as well as the public in general. Deegan & Unerman (2006) are continuing the same articulation saying that is in the organizations best interest if their actions are aligned with the boundaries and norms the society
demands, which will define their legitimacy. The audit firms are as any other firms and they need the legitimacy from the constituencies in order to preserve the business.

The quality of auditors can vary, but higher audit quality may improve the relevance and reliability of their clients’ financial statement, and more faithfully representative or reliable to the external users (Lee & Lee, 2013). Lee & Lee (2013) indicates that there is a difference in the audit quality between big and small audit firms. The authors states that the audit quality is positively related to the size of the audit firm. The study points out that audit firms with a larger client pool lose more economic rent if they would fail with their audit, because they would lose more clients based on the bad performance. This would also affect their legitimacy in more extent than it would for a smaller firm (Lee & Lee, 2013). This indicates that the legitimacy within the larger audit firms, or rather, the Big 4-audit firms, is more substantial. Lee & Lee (2013) states that the brand-recognition as well as their reputation plays an important role in whether the client can obtain the audit quality stated in the contract or not. The authors (p.630) further states that “Auditors with different quality of audits, in performing different levels of effective audits, use different audit judgments, which lead to different degrees of quality on audited financial statements”. Which further strengthen their point that audit firms with a bigger client pool have a stronger incentive to provide a high-quality audit to maintain their reputation, since they have more to lose than smaller audit firms. Therefore, Big 4-audit firms, also has a stronger incentive to maintain their legitimacy towards the society and to uphold the norms and demands that the society lays out (Lee & Lee, 2013).

2.4 Audit Process

The audit process is a set of actions and procedures used to control and review a company. Auditor’s uses the audit process to see that the processes and controls of the company works as they should and that their financials are in order. The audit process consists of three different stages; Planning, Fieldwork and Reporting (FAR, 2006).
2.4.1 Planning

The planning of the audit is one of the most substantial parts of the audit process. It is during the planning where it is decided which parts of the client’s businesses that should be reviewed (FAR, 2006). It is crucial for the auditor to understand the clients’ businesses to allocate resources in an efficient manner as well as to cover the business processes of interest, while considering their internal controls and risks (Bani-Ahmed & Al-Sharairi, 2014; Bierstaker et al., 2001). To extend the knowledge about a client’s business, the collection of information regarding the business is required (FAR, 2006). To make the collection of information more effective, it is essential to have good knowledge about the different IT-systems and controls that the clients apply in their business. The knowledge about a company’s IT systems is also a requirement according to ISA 315 (Axelsen, Green, & Ridley, 2017). The technological advancements, according to Bierstaker et al. (2001), have already made an extensive impact on the planning in the audit process. The new advancements, such as different templates and software, have made it easier to identify the strengths and weaknesses of the company. It has also made it easier to assess the different risks in their processes, such as the inherent risks and control risks, to generate audit tests that are applicable towards the company (Bierstaker et al., 2001).

The information gathered in the planning will later be used as supporting documents during the auditors’ audit and is also used by the auditor in the decision regarding what measures that should be executed (Trotman, Bauer, & Humphreys, 2015). The planning of the audit process is therefore crucial in regards to achieving an understanding where the biggest risks and material misstatements might occur (FAR, 2006), which according to Bierstaker et al. (2001), has been simplified because of the digitalization.

2.4.1.1 Materiality

The concept of materiality has mattered to the audit and the audit practitioners since the 1970s (Legoria, Melendrez, & Reynolds, 2013), and it is used throughout the entire audit and decides the scope as well as the orientation of the audit work (FAR, 2006). To determine the materiality of the company as well as to assess the risks, the collection of information during the planning stage must be sufficient. The study of Joldos, Stanciu, & Grejdan (2010) emphasize that it is also important for the auditors to determine an
appropriate type of audit during the process. According to (ISA 320 p.316), materiality means “the amount or amounts set by the auditor as an error, an inaccuracy or an omission that may lead to annual misstatements, as well as the fairness of the results, of the financial statements and of the enterprise’s patrimony”. FAR (2006) accentuates that an amount that is material in a company should be reviewed in more detail than an amount that is smaller and therefore immaterial. This materiality amount that the auditors decides in the planning, provides a cut-off point or a threshold. By having a materiality cut-off, the auditors can prioritize the more important and material parts of the audit by placing more time on the transactions that exceeds the cut-off (Joldos et al., 2010). This part of the planning has been improved, because of the extensive amount of data that can now be processed (Bierstaker et al., 2001).

2.4.1.2 Risk Assessment

According to Joldos et al. (2010), risk assessment is one of the most important, or material, parts of the planning and audit process. Moreover, Manson, Gray, & Crawford (2015) articulates that the risk assessment should be of main concern for the auditors. The risk assessment, together with the materiality, decides what to review and how much that should be reviewed (FAR, 2006). To effectively assess the risk, Joldos et al. (2010) states that the auditor must carefully plan and conduct the audit so that it reduces the audit risk to an acceptable level. The authors continue by stating that this can be done by generating and running detailed audit tests that will gather sufficient audit evidence, which has been improved by the digitalization and now allows in-depths analysis to improve the risk assessments even more (Han et al., 2016). Bierstaker et al.’s (2001) study concerning the information technology’s impact on the auditing, assert that the audit evidence can be entered into softwares which determines if the audit risks that has been identified have been properly addressed.

In order to make a proper risk assessment, the formula for addressing the audit risk should be used, which consists of the following components;

\[ \text{Audit risk} = \text{Inherent risk} \times \text{Control risk} \times \text{Detection risk} \] (Carrington, 2014; FAR, 2006; Paracini, Malsch, & Paillé, 2014)
Both Carrington (2014) and Far (2006) states that the Inherent risk constitutes the risk that the accounting is wrong or that the management of the company is flawed due to the company’s operations. The inherent risk can be linked to balance posts and transactions which can contain erroneous or fraudulent information (Joldos et al., 2010). The fraudulent information constitutes an increasing risk within the progression of the audit, which can be linked to the increased chance of manipulated documents as Han et al. (2016) explains. Further, it makes it more difficult for the auditors’ to apprehend (Barta, 2018).

According to Joldos et al. (2010), the Control risk constitutes the risk of errors which has not been detected by the company’s system of internal controls. Such risks can for example be if the company’s invoices are not functioning correctly (FAR, 2006). FAR (2006) continues by stating that the control risk and the inherent risk are often mentioned together, because if there is a high control risk and at the same time a high inherent risk, the auditor should make more substantial audit measures in their review.

Lastly, the Detection risk constitute the risk that the auditor, in his review, does not detect errors that are material (Carrington, 2014; FAR, 2006). These errors can result from flaws in the review work of the auditor (FAR, 2006). This risk has increased along with the digitalization, because the auditors’ knowledge regarding the new IT-systems that companies have is too low and can result in errors that goes undetected (Maciejewska, 2014).

2.4.1.3 Assessment of internal controls

FAR (2006) assert that the control risk is of interest to the auditors because the internal controls of the company is what supports the company. Hillo & Weigand (2016, p.2) explains the internal control as, “Internal control is a process, effected by an entity’s board of directors, management, and other personnel, designed to provide reasonable assurance regarding the achievement of objectives relating to operations, reporting and compliance”. Therefore, the author asserts that the internal control is about how well the management controls a company and how well they can manage the risks inherent in their organization. Internal controls aim to mitigate that the risk of errors in the daily activities
does not affect the bookkeeping or leads to financial losses for the company. Furthermore, FAR (2006) emphasize the importance of internal controls, since they not only mitigate the risks if they are functioning correctly, they are also used to support the business. According to Petrașcu & Tieanu (2014), as well as the Swedish law ABL 8:4 (2005:551), it is the boards responsibility to make sure that the internal controls are functioning correctly to prevent as well as detect errors and irregularities.

Included in the planning of the audit, the auditor shall assess the client's internal controls. In those cases, the assessment show that the internal controls are of high quality, the auditor can choose to trust it and therefore simplify the audit and make it more effective (Desai, Desai, Libby, & Srivastava, 2017; Pan & Seow, 2016; Shin, Lee, Lee, & Son, 2017). In Hillo & Weigand (2016) study, the authors states that the internal controls can both be manual and automated, where the manual is controlled by humans and the automated controls is carried through by an automated system implemented in the company. In assessing the controls, the automated controls are more trustworthy than the manual controls, but both needs to be assessed. The internal controls of a company consist of systems, systems which improves along with the digitalization and mitigates the risks inherent within them. The automated control systems are therefore, as mentioned, more trustworthy than the manual and the digitalization makes them more trustworthy (Hillo & Weigand, 2016).

2.4.2 Fieldwork

One way of conducting fieldwork is by the assessment of internal controls, and according to Carrington, (2014), assessment of internal controls is a review step that the auditor can use in his audit process. The auditor should ensure that the internal controls in the company works efficiently and that the data is not misrepresented (Porter, Simon, & Hatherly, 2014). Pan & Seow (2016) agrees with Porter et al. (2014), saying that the auditor should verify that the information, which flows through the internal controls, are in line with the reality. To assess and review the internal controls to verify if the information is sufficient, auditors need to obtain an in-depth understanding of the internal controls of the company (Bierstaker et al., 2001), which is also required by ISA 315 (ISA 315).
One of the key roles of the company’s internal audit is to monitor the internal controls, if there are flaws in the monitoring, resulting in control weaknesses, the external auditor may question the quality of the internal audit (Munro & Stewart, 2011). The internal auditor is employed by the company and has similar tasks as the external auditor and oversees the internal processes of the company. Therefore, the auditor must ensure that the internal controls are working in the way they are intended to work. In order to review the internal controls, the auditor can conduct interviews with the employees, review documents and test the different controls to see if they are working (FAR, 2006). By reviewing the internal controls to see if it is complete, reliable and true, Pan & Seow (2016) states that the auditor can simplify the audit to make it more efficient if the internal controls pass the tests. The authors asserts that in those cases, more time can be spent on analyzes and more detailed information within the accounts of the company.

The other way of conducting the fieldwork is by substantive testing. When the auditor review the different accounts and balance posts in the company as well as the transactions that these accounts is built upon, the auditor conducts substantive testing (FAR, 2006). Porter et al. (2014) indicates that the goal of substantive testing is to verify the existence and validity in the financial accounts. Instead of only relying on the internal controls, Carrington (2014) argues that the auditors can use substantive testing as well. According to Porter et al. (2014), the auditor review the connections between the different account balances as well as testing the opening and closing balances. This type of audit procedure and review can contribute to indications concerning what areas of risks that should be reviewed more in depth (FAR, 2006). Substantive testing has been much more effective with the progression of the digitalization, since the amount of data that can be processed has increased immensely. This enables the auditors to review all types of transactions in a faster and more efficient way, allowing better verification that the companies financials are in order (Han et al., 2016).

In Sweden, there is also one more type of fieldwork, which is the management audit (FAR, 2006). The management audit aims to review if the management of the company manages it as they should be doing according to “Aktiebolagslagen” (2005:551). The auditor shall review if the management have neglected their responsibilities which can
result in liability for damages towards the company itself. Moreover, the auditor shall also review if the company fulfills the requirements to maintain accounting records (FAR, 2006).

2.4.3 Reporting

The aim of the entire audit is to make an auditor’s report concerning the annual report, the company’s accounts and the management of the company. However, the auditor’s report does generally not consist of all the notes that has appeared during the audit, some of these notes are delivered directly to the managers of the company (FAR, 2006).

An auditor’s report is the written statement that the auditor should hand off after every financial year concerning his review work of a company, which explains the work of the auditor as well as observations during the year (Sevenius, 2019). Furthermore, the auditor’s report should also contain the auditor’s “recommend” or “not recommend” concerning if the financial statement of the company is established, that the profit is utilized along with the proposal in the management report and that the board and CEO is discharged from liability (Carrington, 2014; FAR, 2006). An auditor’s report can be handed off in two different settings, an unmodified auditor’s report or a modified auditor’s report. An unmodified auditor’s report means that the report follows the standardized execution, with no material errors encountered nor any remarks from the auditor. A modified auditor’s report means that the report has some remarks or material errors, for example if the auditor has noticed some irregularities during the audit. A modified report is a strong indicator towards the shareholders and stakeholders that the company is not managed as expected (Sevenius, 2019).

2.5 The digitalization’s effect on the audit risk

One of the main purposes of auditing through the auditor’s perspective is to make sure that the financial statements does not contain any material misstatements (Carrington, 2014). The wave of the digitalization has made many industries more effective, the new systems and applications that the digitalization has resulted in has many positive aspects (Barta, 2018; Bizarro & Dorian, 2017; Chou, 2015). The digitalization has also mitigated
many of the risks inherent in the audit process, and at the same time has allowed the auditor to free time from simpler task for more in-depth tasks (Lombardi et al., 2015). Although the positive aspects are many, Kotb and Roberts (2011) assert that the technology-centric nature of the digitalization has enabled new risks to emerge. These new risks include the risk that the integrity and reliability of electronic documents gets compromised (Chou, 2015), the extended exposure of cyber threats (Barta, 2018), the risk of internal fraud (Barta, 2018; Han et al., 2016) and the auditor’s lack of knowledge about the IT-systems (Han et al., 2016). These risks evolve along with the digitalization (Dzuranin & Malaescu, 2016), which is why it is crucial for auditors to have the knowledge to accurately and effectively mitigate these risks (Barta, 2018; Han et al., 2016).

The presence of IT-risks are widespread; therefore, appropriate risk identification and management processes needs to be conducted by the auditor to understand the nature of organizations and to determine the risk level and adapt the audit process thereafter (Barta, 2018). In order to understand the nature of organizations and evaluate the risks, the auditor needs to have knowledge about the client’s IT-systems (Askary, 2007; Axelsen et al., 2017). According to Han et al. (2016), the lack of knowledge regarding these systems may cause the auditor to misjudge or overlook material misstatements within the audit. Barta (2018), Chou (2015) and Han et al. (2016) accentuates that this lack of knowledge can also result in an increased cyber threat. Chou (2015) mentions that the majority of data must pass through the internet, resulting in exposure for cyber-attacks. Barta (2018) emphasize the importance of knowledge, stating that without proper knowledge, malicious software programs can encrypt sensitive business information. These security risks can also result in improper access to the company’s database (Han et al., 2016). Barta (2018) articulates that these cyber risks that poses a threat towards the systems is the biggest negative consequence of the automation. That is why the assessment of internal controls, that Pan and Seow (2016) mentions, is so important for the auditors. With efficient and working internal controls, the cyber risk can be mitigated (Porter et al., 2014)

The lack of knowledge among auditors concerning IT-systems can also result in an increased risk of internal fraud, which also affects the audit risk since lack of knowledge
results in a higher detection risk (Maciejewska, 2014). This type of risk is present with the lack of internal controls, where business data might be manipulated (Barta, 2018). The risk of internal fraud might occur if the access rights is not appropriately granted, unauthorized access goes unnoticed and if one single employee is involved in the whole transaction process (Barta, 2018). It is the auditor’s responsibility to review the risks of internal fraud and to prevent this from happening. But if the auditor’s IT knowledge and skills regarding the IT-system is lacking, this will be a contributing factor towards internal control deficiencies and audit failures (Han et al., 2016). Along with both the cyber risk and the internal fraud risk, Maciejewska (2014) allege that the risk of tampered and manipulated documents is present as well. With the increased data processing, there is a large risk that the documents integrity and reliability is compromised from both external and internal factors.

The risks that is affected by the technology and digitalization is evolving in the same pace as the advancements and the underlying reason for most of the risks are the lack of knowledge from the auditor’s point of view (Dzuranin & Malaescu, 2016). In order to mitigate the risks rooted in the IT advancements, the auditors need to improve their knowledge regarding these issues (Barta, 2018; Han et al., 2016). However, Lombardi et al. (2015) states the detection and counteracting of these risks are covered more in the auditors training today. The role of IT-auditors, whose expertise lies within the scope of these issues, are increasing as well (Barta, 2018).
3. Method and Methodology

The purpose of this chapter is to explain the methodology and method used in the study. It provides a detailed description of the collected data and a thorough and descriptive walkthrough of the Delphi method will also be presented.

3.1 Methodology

To get a deeper understanding on how different audit firms perceive the digitalization’s effect on the audit process, earlier research and theories have been used to guide this study and to enhance the knowledge of important factors. It is performed by using a deductive approach, which Bryman & Bell (2011) argues is the most frequently used aspect of the relationship between research and theory. The method applied in this theory is of qualitative nature and will aim to provide a descriptive research to observe and reflect on the characteristics of the population sample by using the Delphi method, with the help of two panels of experts within the field of auditing.

3.2 The Delphi Method

The Delphi Method is a tool for qualitative research and has been proven to be a very popular method (Okoli & Pawlowski, 2004). According to Hajiha (2012), the Delphi method is used in macro subjects, like qualitative matters in order to identify affecting factors concerning different issues. These issues of interest are identified by using qualified experts of the concerning field. Delphi is a structured process to make decisions in survey rounds in the form of a questionnaire and is desirable because it does not require the experts to meet physically. According to Hajiha (2012), this type of data collection is more trustable, in form of panels consisting of experts, than from individual and personal opinions, and the results are therefore more objective and precise.

A brainstorming session was exercised with the experts to further intercept relevant and up-to-date issues regarding the digitalization’s effect on the audit. The brainstorming part
of the Delphi method can be conducted in different ways, such as in person or through another questionnaire. In this study, the brainstorming session was carried out in person to create a discussion about the issues and reflections concerning why and how that factor is relevant to the issue is something that was considered important in this study. Open-ended questions were also asked to further enhance the discussion. See Appendix 1 for brainstorming topics that were discussed. Based on the attained knowledge from the literature review, this study created a questionnaire with the aim of capturing the factors of digitalization within auditing.

With these two types of information sources, the questionnaire was formed to capture the most relevant and up-to-date questions. The questionnaire consisted of 26 questions, where questions were asked on each of the focus areas discussed during the brainstorming session, see Appendix 2 for the questionnaire. Based on the purpose of this study as well as the brainstorming session and literature review, the questions were created to capture relevant information from the experts to answer the research question. The questions are linked back to the purpose since the discussion during the brainstorming session was about the purpose and the research question given in the thesis.

This questionnaire was sent out to the experts within the panel, which had a deadline of one week to complete the questionnaire. By the time all experts had responded, the data was compiled and summarized. After the summarization, the questionnaire was sent out once more to the experts of the panels, including the summary of all the answers from the previous round. With this in mind, the respondents were likely to change opinion about certain issues when reading what the other experts had answered. The experts would reach a consensus regarding the different questions and issues and would lead to the identification of the affecting factors on the audit process and audit risks.

### 3.3 Choice of panels

Okoli and Pawlowski (2004) explains that the Delphi method is not dependent on a statistical sample used, for example, to answer questions regarding different regression analysis. Instead, it is a group decision mechanism that requires experts, within the chosen field, to have a deep knowledge and understanding regarding the issues. Therefore, since
it is based upon group consensus among people and not statistical evidence, it is crucial that the experts are qualified for the Delphi method to work as designed, to have enough expertise within the area. Despite this critical step in the process, Okoli & Pawlowski (2004) mention that even though it is an important step, it is the most neglected step in the Delphi method.

The requirements of the panel size in the Delphi method are modest and usually 10 to 18 experts are chosen for each panel. The variety of panels differ and can be as many as the study requires, but it is not usually more than four. The number of panels depends on the design of the research question(s) in the research (Hajiha, 2012). In this study, only two panels were necessary since we are comparing the Big 4-firms to the smaller firms. The smaller firms in this thesis are defined as the remaining firms outside the Big 4. These firms differ substantially in size, were many firms are very small. The smallest of the firms lack the resources and the people to effectively implement the digitalization. The smallest firms were therefore excluded. The small firms that were applicable towards the panels are the firms which are considered having proper resources to implement the digitalization in an effective manner. From these firms, the firms which have employees who fits the requirements of being an expert were selected. The requirements are explained in the next section. Since the Big 4-firms consists of four audit firms, both panels were therefore compiled of four firms each.

3.3.1 Research sample

The experts these panels comprise of should have long experience within the field as well as an in-depth knowledge and understanding of auditing. The experts that were chosen to participate in the panels for this study were carefully selected. Only auditors that are an authorized public accountant were considered, and from these auditors, a minimum of ten years’ experience were needed to be selected. Among these authorized public accountants, a variety of partners, managers, IT-managers and authorized public accountants with the said experience were selected.
Table 1 - Distribution of the firms in the panel

<table>
<thead>
<tr>
<th>First Panel</th>
<th>Second Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deloitte (3 experts)</td>
<td>BDO (4 experts)</td>
</tr>
<tr>
<td>Ernst &amp; Young (4 experts)</td>
<td>Grant Thornton (4 experts)</td>
</tr>
<tr>
<td>KPMG (3 experts)</td>
<td>Mazar (3 experts)</td>
</tr>
<tr>
<td>PwC (3 experts)</td>
<td>Baker Tilly (2 experts)</td>
</tr>
<tr>
<td><strong>Total: 13</strong></td>
<td><strong>Total: 13</strong></td>
</tr>
</tbody>
</table>

In table 1, the distribution of the different firms and experts that were participating in the questionnaire are highlighted. These categorizations will represent the two panels, one being experts from the Big 4-firms and the other being experts from the remaining firms with proper resources. The number of experts chosen to be a part of the two panels were a total of 26, 13 for each panel. This is considered to be satisfactory due to the position each expert has within their respective firm. Furthermore, considering that the time of the year this study was conducted, is the part of the year when the auditors in Sweden has a heavy workload, it would be difficult to achieve a higher number of experts in the panels.

The partners and managers were chosen because of their value for their firms and their immense experience when it comes to auditing. They have been in the profession for a long time and have deep knowledge, they have also most likely been through a lot of the changes already implemented in the field. Their knowledge is a solid contributor to this study through the questionnaire. The IT-managers were included because of their in-depth knowledge regarding information technology systems and could contribute a lot in that aspect, they are not always an authorized public accountant, but it is their IT-competence that is of importance. The authorized public accountants, without any further title, were selected due to their experience, which had to be ten years or more. It was hard to only rely on the participation of managers and partners, which is why the authorized public accountants were included as well. Their knowledge is often as good as the partners and managers, that is why they seemed fit to be included in the panels. Regarding the smaller firms, not all of them are big enough to have different titles within the office, which is a further reason why authorized public accountants with no further title was included. Both
panels have the same number of experts with the different titles. This were the case to create continuity between the panels.

3.4 Data collection

The data collection in this thesis originates from the questionnaire that was sent out to achieve the purpose of this study, to answer the research questions given. The study used a semi-structured Delphi questionnaire where most of the questions was built on the “ranking-type” Delphi, were the respondents rank certain questions to develop a group consensus. Some questions were also open-ended questions to form some sort of discussion as well and to learn more about how the experts might debate when it comes to certain issues. The first questionnaire was sent out in March and the respondents had one week to finish it. In the event of one of the experts from either panel were prevented from finishing the questionnaire for some reason, a new expert was added to replace the old one as there were back-up experts for this kind of event. These back-up experts were prepared to replace an old one if necessary. The questionnaire consisted of 26 questions as well as four general questions regarding what firm they are from and what title they currently have. 26 experts received the questionnaire two times, the first round and the second round.

When all the experts had answered the questionnaire, the data was summarized and thoroughly processed and reviewed. When the first round was completed, the same questionnaire with the same exact questions were sent out again, to the same experts. This time the questionnaire also consisted of the summarized answers from the first round of the questionnaire. When the experts yet again had answered the questionnaire, they had completed their assignments and the remaining part was to summarize the data again and this time to analyze it.

3.5 Data analysis

When conducting the questionnaires, it is important to have gathered sufficient knowledge regarding what data that is needed. Both the literature review and the
brainstorming session were helpful in determining what kind of data that was needed in order to be able to answer the research questions. Thorne (2000) asserts that a researcher conducting a qualitative study must be engaged throughout all phases of the study in order to generate findings that transform the data collected into new knowledge.

Different analytic strategies are important to transform the raw data received from the questionnaires (Thorne, 2000). The answers received from the questionnaires was transformed to a coherent depiction of the issues observed in the covered literature and the questionnaire by using a constant comparative analysis, originating from Glaser and Strauss (1967). The process involves the identification of a phenomenon or an object, the identification of key concepts, making decisions regarding data collection based on one’s understanding of the phenomenon, deciding where to collect the data and selecting comparison groups (Glaser & Strauss, 1967). This method, by Glaser and Strauss (1967), was used because it fits the purpose of this study well and it is a well-known theory as it is the most frequently used one in qualitative studies (Bryman & Bell, 2011).

When all the experts in the panels had answered the questionnaires, both the first and second time, the data was processed. The raw data was transcribed from numbers into writing, to in a more effective and transparent way explain the findings. The data from both rounds was transcribed into tables to easier see the differences among the answers. To create a conceptualization regarding possible relations between the answers, the data is compared between the two panels. The processing of the collected data is what combines the empirical evidence with the analyze. With the data collected, parallels between the Big 4-audit firms and smaller audit firms was drawn to see if there were any perceived difference among them concerning the digitalization’s effect on the audit process and the audit risks.
4. Empirical Findings

In the following section the empirical findings from the two rounds of the Delphi questionnaire will be presented. The empirical findings are presented in an orderly manner following the same sequence as presented in the questionnaire. The order that the data will be presented are as follows: The digitalization effect on the audit process, the differences between the Big 4-firms and the smaller firms, the digitalization effect on the audit risk and lastly the auditing in the future.

4.1 Results from the brainstorming session

The brainstorming session is held to further intercept relevant and up-to-date issues that the audit profession is facing. The major areas highlighted by the participating experts are; the digitalization effect on the audit process, differences between the Big 4-firms and the smaller firms, the digitalization’s effect on the audit risk and auditing in the future.

4.1.1 The digitalization’ effect on the audit process

The auditing is carried out through the audit process which have gone through many transitions over the years. More efficient tools and systems have been developed to further enhance the audit process. The participants argued that the digitalization has affected the audit process immensely. Higher quality and more in-depths audits can be carried out because of the new improved tools. The participants argue that because of this, the audit has shifted more to continuous audit from the periodic audit, meaning that it is easier to review an entire business year rather than only one period, covering a much higher percentage of company data. Because of the improved tools, more time can be spent on analysis and interpreting the results rather than conducting simple tasks. Furthermore, all the experts participating in the brainstorming session indicated that the future of audit depends on the technology that the digitalization can develop.
4.1.2 Differences between Big 4-firms and the smaller firms

The differences between the firms is an up-to-date issue that the digitalization is affecting. The experts discussed the different implementing strategies and the costs that drives the implementation of new systems. All the experts agreed that the implementation of the new systems are costly and requires resources. Furthermore, discussions concerning the different firms’ competitiveness in the future and different advantages and disadvantages between the firms were held.

4.1.3 The digitalization’ effect on the audit risk

With the digitalization of the audit and the audit process, researchers argue that new risks are emerging alongside of it. Ranging from increased risk of manipulated documents to cyber security risks. The researchers both agree and disagree concerning what risks that affects the auditing and the audit process, but they have a consensus that new risks have emerged because of the digitalization. The experts discussed what types of risks that the digitalization concerns and whether these risks are new towards the audit or not and how these can be counteracted in the future.

4.1.4 Auditing in the future

The future of auditing is uncertain, some researchers believes that almost the entire audit will be automated while some believe that only parts of the audit will be automated. This is however, an issue that is of outmost concern for the practitioners, which the experts agreed upon. Some studies imply that the audit will transition towards other services, such as consulting. However, the experts discussed different outcomes of the future which entailed that they believe that changes will come.

4.2 Descriptive statistics

As mentioned in the method section, the number of experts in the panels was 26 auditors (13 in each panel). In the first round of the questionnaire, 100% of the experts from the Big 4-audit firms as well as the smaller firms responded to the questionnaire. In table 2,
the professional position of each respondent from both panels is displayed as well as the frequency and the percentage each position constitutes.

Table 2 - Respondents

<table>
<thead>
<tr>
<th>Professional Position</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT-Manager</td>
<td>2</td>
<td>7,70%</td>
<td>7,70%</td>
</tr>
<tr>
<td>Manager</td>
<td>4</td>
<td>15,40%</td>
<td>23,10%</td>
</tr>
<tr>
<td>Partner</td>
<td>4</td>
<td>15,40%</td>
<td>38,50%</td>
</tr>
<tr>
<td>APA2</td>
<td>16</td>
<td>61,50%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>100%</td>
<td>169,3%</td>
</tr>
</tbody>
</table>

The study chose to have the same number of IT-managers, managers, partners and APA in both the panels to create a continuity between them.

Table 3 – Experience of the experts

<table>
<thead>
<tr>
<th>Years of experience</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>1</td>
<td>3,8%</td>
<td>3,8%</td>
</tr>
<tr>
<td>&gt;10</td>
<td>25</td>
<td>96,2%</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>100%</td>
<td>103,8%</td>
</tr>
</tbody>
</table>

One of the requirements for participating in the panels were a minimum of ten years of experience within the profession. In table 3, the experience of the experts from the Big 4-firms and the smaller firms is displayed. One of the experts from the first panel had less than ten years’ experience, but since this expert is a partner at his firm, the answers were included anyway.

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2 Authorized Public Accountant
4.3 Results

The responses from each respondent in both Delphi questionnaire were examined by the authors and paraphrased below. The results from the questionnaires will be presented in an orderly manner with the answers from the experts of the Big 4-firms in the following section and the answers from the expert of the smaller firms will be presented in the section after that.

To further clarify the results, the following denominations, outlined in table 4, will be used for each concerned question. The column to the left represents the number of each question as well, for example, F1 is question one.

Table 4 - Denominations

<table>
<thead>
<tr>
<th>Denomination</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digitalization effect on the audit process</strong></td>
<td></td>
</tr>
<tr>
<td>F1</td>
<td>The auditors’ opinion regarding the digitalization impact on the auditing</td>
</tr>
<tr>
<td>F2</td>
<td>The digitalization effect on the audit process</td>
</tr>
<tr>
<td>F3</td>
<td>The auditors’ opinion regarding the audit process in the future</td>
</tr>
<tr>
<td>F4</td>
<td>How the review work within the audit process will change in the future</td>
</tr>
<tr>
<td>F5</td>
<td>How the audit process benefits from the digitalization</td>
</tr>
<tr>
<td>F6</td>
<td>The auditors’ opinion regarding automatization of some steps in the audit process</td>
</tr>
<tr>
<td>F7</td>
<td>The auditors’ opinion regarding AI</td>
</tr>
<tr>
<td><strong>Differences between the Big 4-firms and the smaller firms</strong></td>
<td></td>
</tr>
<tr>
<td>F8</td>
<td>The firms cost-efficiency regarding the digitalization of the firms</td>
</tr>
<tr>
<td>F9</td>
<td>The Big 4s advantages in implementing the digitalization</td>
</tr>
<tr>
<td>F10</td>
<td>If the firms benefit from the digitalization</td>
</tr>
<tr>
<td>F11</td>
<td>The smaller firms’ competitiveness towards the Big 4 in a more digitalized future</td>
</tr>
<tr>
<td><strong>Digitalization effect on the audit risk</strong></td>
<td></td>
</tr>
<tr>
<td>F12</td>
<td>The digitalization effect on the audit risk</td>
</tr>
<tr>
<td>F13</td>
<td>Regarding new risks emerging from the digitalization</td>
</tr>
<tr>
<td>F14</td>
<td>If the digitalization has neutralized risks inherent before the digitalization</td>
</tr>
<tr>
<td>F15</td>
<td>Manipulation of documents</td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------</td>
</tr>
<tr>
<td>F16</td>
<td>If irregular/illegal activities are easier to hide</td>
</tr>
<tr>
<td>F17</td>
<td>If the digitalization makes it harder to execute such activities</td>
</tr>
<tr>
<td>F18</td>
<td>How to counteract manipulation of documents in the future</td>
</tr>
</tbody>
</table>

*Auditing in the future*

<table>
<thead>
<tr>
<th>F19</th>
<th>People hired in the auditing profession in the future</th>
</tr>
</thead>
<tbody>
<tr>
<td>F20</td>
<td>If internal controls will be automated</td>
</tr>
<tr>
<td>F21</td>
<td>If the entire audit will be automated</td>
</tr>
<tr>
<td>F22</td>
<td>Data processing</td>
</tr>
<tr>
<td>F23</td>
<td>Better auditing tools</td>
</tr>
<tr>
<td>F24</td>
<td>New services offered in the audit</td>
</tr>
<tr>
<td>F25</td>
<td>IT-Competence in the future</td>
</tr>
<tr>
<td>F26</td>
<td>How auditors can prepare themselves for a more digitized future</td>
</tr>
</tbody>
</table>

### 4.3.1 The Delphi Rounds – Big 4-firms

#### 4.3.1.1 The digitalization effect on the audit process

Concerning F1-F7, the experts from the Big 4-firms, in the first panel, agreed upon some issues but some were also very spread in the first round of the questionnaire. For example, regarding F1 and F6, the experts all agreed upon that the impact of the digitalization is positive and that some more steps in the audit process will be automated in the future, a 100% consensus was already reached in the first round. This consensus was upheld even in the second round, where all the experts stuck with their original answer. The experts’ thoughts on what steps that will be automated were also similar, were many answered that the sample testing of populations will be automated. Moreover, the administrative parts, such as the planning step within the audit and reconciliation of accounts was also thought to be automated in the future.

Concerning F2 and the effect that the digitalization has on the audit process, the experts all agreed, in the first round, that the digitalization have influenced the audit process but disagreed on what extent the effect has had. 15% (2) of the expert thought that the effects have been moderate, 46% (6) thought that it has had a large effect and lastly, 38% (5) thought that the effects have been very large. In the second round, several experts
modified their answers, reaching a higher consensus that the digitalization has had a large effect on the audit process. Now only 8% (1) of the experts believed that the effects have been moderate and 54% (7) believed that the effects have been very large. The remaining part still believed the same. Moreover, regarding F3, at first, the experts disagreed on how the audit process will look like in the future. The answers indicate that the experts have different opinions regarding the future of the audit process. The answers were scattered in the first round, where 31% (4) believed that the audit process will be less profound and 38% (5) believed that it will be more profound, the remaining 31% (4) believed that the audit process will be unchanged. However, in the second round of the Delphi questionnaire, although not till 100%, a more general consensus was reached. Ten out of the 13 experts in the first panel believed that the audit process will be more simple and less profound, constituting 77%. Of the remaining part, 15% (2) of the experts believed that there will be no difference and 8% (1) still believed that the audit process will be more profound.

Although the opinions regarding F3 where very scattered in the first round, the experts reached a consensus regarding the review work in the audit process in the future, F4, where 92% (12) of the experts thinks that it will be more profound and more in-depth. Only 8% (1) expert believes that it will be less profound and in the second round, this expert changed his mind and a 100% consensus were reached concerning the review work in the future. The experts believe that the audit process itself will be less profound, as mentioned concerning F2, but they also believe that the review work within the audit process will be more in-depth in the future because of the more simplistic audit process.

However, whether the audit process benefits from the digitalization or not, the opinion of the experts regarding F5 differed in the first round. Most of the experts believed that the audit process benefits or that there has been no difference, where 46% (6) of the experts believes that there are benefits and another 46% (6) of the experts believes that there has not been any difference. The last expert believes that the audit process does not benefit from the digitalization. In the second round, some consensus was reached, but not an ultimate one. 77% (10) of the experts thought that the audit process has benefited after the second round and the remaining part, 23% (3), believed that the digitalization has not resulted in any differences. The experts mention that reasons why the audit process has
benefited is because of the more time that can be spent on more time-consuming analysis instead of simpler task such as the planning. In this way, they accentuate that they can also offer more quality audits.

Finally, the last question of the questionnaire that concerned the digitalization effect on the audit process where if the experts believe that the audit process will be replaced by artificial intelligence, F7. The experts were skeptical with the idea of a fully automated audit process, where in the first round, only 15% (2) of the experts believed that the auditing will be replaced by AI. However, they think it will only be applicable towards smaller firms in the long term. In the second round of the questionnaire, the same skepticism was still present and one of the experts changed the answer. Only one expert remained with the opinion that the audit will be replaced by AI in the future, but still believes it will only be applicable towards smaller firms.

4.3.1.2 Differences between the Big 4-firms and smaller firms

The experts from the first panel believes that there are differences among the Big 4-firms and the smaller firms. For example, regarding F9, the experts believe that their firms, the Big 4, has advantages over the smaller firms in implementing the digitalization. Only one expert believes that the Big 4-firms do not have an advantage, the rest believes that they have a strong advantage. The experts strengthen their opinion by explaining that the Big 4-firms have more resources than the smaller firms. They articulate their opinion by justifying that it is because of these resources that the implementing for the Big 4-firms are superior. These resources include both funds and people. Furthermore, other reasons they explain are that the Big 4-firms are the leader in their profession and drives the industry forward by innovation. Some experts also explain that the Big 4 generally works with bigger companies that are more digitized and need to adapt to this, why they have the need to implement new systems. They point out that the smaller firms do not have this need since they aim towards smaller companies. Although, one advantage that the smaller firms have towards the Big 4, as some of experts pointed out, is that they are more flexible since they have a shorter chain of commands. It takes less time for the smaller firms in their decision-making than what it does in the bigger firms. This result remained unchanged in the second round.
However, in the first round of the questionnaire, the experts thought very differently concerning the cost-effectiveness of their implementation of the digitalization, highlighted in F8. Only 38% (5) of the experts thought that the implementation of the digitalization was cost-effective for their respective firm. Another 38% (5) thought that it was neither good nor bad and the rest, 23% (3), intended that there is room for improvements. In the second round, it was a slight change of mind, where now 46% (6) thinks that it is cost-effective and 31% (4) thinks that it is neither good nor bad, the rest were unchanged. Furthermore, F10 concerned the experts’ opinion regarding the benefits that their respective firm gains from the digitalization. Most the experts, 77% (10), thought that their firm benefits from the digitalization and the systems and improvements that it brings. Only one expert believed that his firm do not benefit from the digitalization and the remaining two thought that it was neutral. In the second round, two of the experts change opinions and now believe that their firms benefit from the digitalization, which constitutes 92% (12) of the experts. The remaining one still believes that it is neither good nor bad.

The last question regarding the differences between small audit firms and the Big 4 are the smaller firms’ competitiveness towards the Big 4 in the future considering the digitalization, highlighted in F11. 85% (11) of the experts believed that the smaller firms will have a difficult time competing with the Big 4 in the future due to the digitalization. The remaining two experts did not believe that this would be an issue. In the second round, one of the two experts who thought that the competitiveness wouldn’t be an issue changed his opinion. Now 92% (12) of the experts believed that the smaller firms will have less competitiveness in the future. Some of the arguments from the experts concerns resources; without proper resources, it is hard for any firm to stay competitive. Every one of the twelve experts argued that it will take heavy investments to acquire all the future technology in the field, investments that they believe smaller firms will not have, saying that they lack the capacity.
4.3.1.3 The digitalization effect on the audit risk

In the questionnaire, the experts were also asked about the digitalization effect on the audit risk, F12-F18 in table 4. Regarding the effect that the digitalization has had, F12, the answers were scattered. 38% (5) experts believed that the digitalization has affected the audit risk, 31% (4) who believed the opposite and the remaining 31% (4) believed neither. No ultimate consensus was reached in the second round either, however, some experts changed their opinion and now 54% (7) of the experts believed that there has been an effect and the remaining experts were split between no effect and neither.

However, even though no consensus was reached regarding F12, some consensus was reached in F13, concerning the experts’ opinion on whether new risks has emerged along with the digitalization or not. In the first round, 69% (9) of the experts believed that new risks have emerged. The remaining 31% (4) believed that it has not emerged any new risks. Although there was some disagreement in the first round, a full consensus was reached in the second round, 100% of the experts now believe that new risks have emerged. The experts were unanimous in their thoughts that IT-risks are the risks that has emerged, such as cyber risks and manipulation of documents.

However, even though they consider manipulation of documents an emerging risk, they do not believe that it will get easier to manipulate documents as the digitization progress. In F15, all the experts almost agreed in the first round that it will not get easier to manipulate documents, 85% (11) of the experts shared this opinion. They explain this by asserting that the tools of the auditors also improve, which makes it more difficult to manipulate the documents. After the second round, the experts reached 100% consensus and were unanimous in their thoughts that manipulation of documents will not get easier. With the more improved tools, the experts do not consider that it easier to hide illegal/irregular activities from the auditor either, as mentioned in F16. The experts agreed to 100% that you cannot hide such activities from the auditor. This result remained unchanged even in the second round of the questionnaire. Furthermore, F17 concerns the experts’ opinion on whether or not the digitalization makes these activities harder to execute. The experts agreed to 100% on this front as well, asserting that the digitalization makes it harder carry through with these activities because of better and more advanced tools. Regarding F18, on how to counteract manipulation of documents and other
activities in the future, the experts all agreed on that professional skepticism is a must in their review work and to not trust everything the client says, but also to improve their knowledge regarding the IT-systems.

Moreover, the experts were also asked if they believe that the digitalization have neutralized some inherent risks that existed before the digitalization began, pointed out in F14. 85% (11) of the experts agreed that the digitalization has neutralized some risks, only 15% (2) of them thought otherwise. The experts pointed out that risks inherent in cash management is almost gone since there is mostly credit cards and bank cards today. Other risks that has been neutralized according to the experts are the management of the inventory and the human factor. They articulate by explaining that the without the human factor, less error occurs since it is all computer based, and the same goes for the inventory management. In the second round of the questionnaire, the experts were unanimous in their answers, agreeing that risks have been neutralized because of the digitalization.

4.3.1.4 Auditing in the future
Concerning the auditing in the future, the experts agree that the digitalization will lead to better data processing capabilities, as mentioned in F22. A full consensus was reached in the first round of the questionnaire. In accordance with F22, the experts all agreed upon F23, that the digitalization will bring better auditing tools. The same result stood even in the second round of the questionnaire. This aligns with F19, were the experts do not believe that more people will be hired in the auditing profession in the future, in both rounds of the questionnaire the experts believed that less people will be hired or the number of people will remain unchanged, 69% (9) and 31% (4) respectively. However, the experts disagreed regarding the future of automatization in the internal controls, highlighted in F20. The answers were scattered and 38% (5) of the experts believed that the internal controls will be automated and another 38% (5) believed that it will not, the last 23% (3) believed that it will not be any difference. In the second round however, a few experts changed their opinion and the and now 62% (8) believed that there will be an automatization of the internal controls in the future. Moreover, the experts were also asked if they believe that the entire audit till be automated in the future, in F21. In the first round, only 15% (2) of the experts believed that there was a slight chance of that
happening, were the rest believed that it would not. In the second round however, the experts reached a full consensus believing that the audit would not be automated.

Furthermore, a question regarding new services in the future of auditing, F24, were asked to the experts where 100% of the experts all answered the same, consulting. The experts believe that the auditing will shift more towards consulting in the future and this result was the same in both rounds of the questionnaire. Moreover, a strong consensus was also reached concerning F25, the importance of IT-competence in the future. With a more digitized world, 85% (11) of the expert consider IT-competence as utmost important. The remaining 15% (2) of the experts believed that it is neither important nor unimportant. These two experts changed their opinions in the second round and a 100% consensus were reached. The last question concerning auditing in the future and the last question of the questionnaire, F26, was about how the auditors can prepare themselves and deal with a more digitized future. Two answers were given by almost all the experts; to not be negative towards the digitalization but instead be open for the changes that it brings and to attend the education concerning the digitalization that is offered by the firms.

4.3.2 The Delphi rounds - Small firms

4.3.2.1 The digitalization effect on the audit risk

Regarding the answers from the experts in the second panel, the smaller firms, the outcome of the questionnaire in the first round was similar to the ones in the first panel. 92% (12) of the experts in the second panel believes that the digitalization in the audit process, F1, is a good thing. Only one expert thinks otherwise and explained it by weighing the costs towards the benefits. This expert claims that the margins of profit is worse than it was before. The outcome was the same in the second round of the questionnaire, no further consensus was reached. However, concerning F6, 100% of the experts within the second panel believes that some more parts of the audit process will be automated in the future. The majority of the experts believes that some planning steps will be automated and some also believes that the ticking of annual reports and the opening balances will be automated. This consensus was upheld even in the second round; no changes were made.
As for the first panel, the second panel opinions were also very scattered regarding F2 and to what extent that the digitalization have affected the audit process. 15% (2) of the experts believes that the effects have been moderate, 54% (7) of the experts believes that the effects have been large and lastly, the remaining four 31% (4) believes that the effects have been very large on the audit process. No experts believe that there has been no effect from the digitalization on the audit process. In the second round, a few experts changed their opinions and now believes that the digitalization have affected the audit process more. 54% (7) of the experts now believes that the extent that the audit process has been affected is very large and 31% (4) now believes that the effect on the audit process is large. The remaining two experts still believes that the effects are moderate.

Moreover, the experts’ opinions regarding F3, how the audit process will be in the future, were also very scattered in the first round. 46% (6) of the experts believes that the audit process will be less profound and simple than it is today and 31% (4) believes that the audit process will be more profound. The remaining part, 23% (3), believes that there will be no difference towards the audit process in the future. In the second round however, some changes were made but not as much as in the first panel. A total of 54% (7) believes that the audit process will be more simplistic and less profound, this implies a slight change compared to the first round. Of the remaining part of the experts, 31% (4) believed that no changes will be made and 15% (2) believed that the audit process will be more profound. Furthermore, regarding F4 and the auditors’ review work within the audit process, most the experts, 62% (8), believed that the review work will be more profound than it is today. Of the remaining experts, 23% (3) believed that it will be less profound and the last 15% (2) believed that no changes will occur. In the following round of the questionnaire, no changes were made and the experts thought the same as in the first round.

Whether the experts believe that the audit process benefits from the digitalization or not, as mentioned in F5, the answers were somewhat scattered. 62% (8) of the experts believed that there has been benefits, but 38% (5) thought that the digitalization has not resulted in any benefits. A few changes in the experts’ answers were made in the second round, where 69% (9) now believed that the audit process has benefited and 31% (4) believed that no difference has been made. As for the first panel, the second panel also believed
that the digitalization has freed up time that can be spent on more important steps. They
do not accentuate the importance of the increased quality audits as the first panel, but
mention it as a factor. Concerning the experts’ thoughts on artificial intelligence in F7, the
same skepticism that existed for the first panel were present for the experts in the
second panel as well. However, none of the experts from the smaller firms believe that
artificial intelligence will replace the auditing, a 100% consensus was reached in the first
round and this remained unchanged also in the second round.

4.3.2.2 Differences between the Big 4-firms and the smaller firms
As for the first panel, the second panel also believes that there are differences among the
Big 4-firms and the smaller firms. Regarding F9 and the experts’ thoughts on the
advantages or disadvantages that their firms, the smaller ones, have compared to the
bigger firms in implementing the digitalization, the experts believes that they have both
advantages and disadvantages compared to the Big 4-firms. In the first round of the
questionnaire, 85% (11) believed that the Big 4-firms have advantages in the
implementation. These advantages, according to the experts, concern the resources that
the Big 4-firms have. They articulate their opinions in the same way as the experts from
the first panel, that these resources make the implementation of the digitalization superior.
However, the experts from panel two also emphasize that the smaller firms have some
advantages against the Big 4-firms as well, such as the flexibility that they have which
the bigger firms do not have. Although the smaller firms have some advantages as well,
the experts in the second panel believes that the disadvantages weigh more. In the second
round of the questionnaire, the experts all agree that the Big 4-firms have advantages in
the implementation, a consensus was reached.

The experts in the second panel did not believe that their firms were particularly cost-
effective in their implementation of the digitalization. Most the experts, 54% (7) believed,
when answering question F8, that the implementation was not cost-effective. Of the
remaining part of the experts, 31% (4) believed that it was neither good nor bad and the
last 15% (2) of experts believed that the implementation is cost-effective. A few
differences could be interpreted in the second round of the questionnaire, where 62% (8)
believed that the digitalization is not cost-effective and the rest of the experts, 38% (5)
believed that the implementation is cost-effective. Moreover, concerning F10 and the experts’ opinions regarding the benefits of the digitalization, the answers were scattered. 77% (10) of the experts thought that their firms either benefits from the digitalization or that it was neutral, neither good nor bad, distributed evenly over the two. The remaining part of the experts, 23% (3), believed that they have not benefited from the digitalization at all. However, in the second round, three of the experts changed their answers towards a more beneficial idea of the impact of the digitalization. After the second round, 62% (8) of the experts believed that the impacts have been beneficial, 23% (3) believed that it has neither been good nor bad and the last 15% (2) believed that it has not been any positive effects.

F11, the remaining question regarding the differences between small audit firms and the Big 4 concerns the smaller firms’ competitiveness towards the Big 4 in a more digitized future. The answers from the first panel indicated that the experts from the Big 4 firms believes that the smaller firms will have difficulties in competing with the Big 4 in the future. However, the answers from the second panel and the experts from the smaller firms are much more scattered. 54% (7) believed that it will be harder for the smaller firms to stay competitive, the remaining 46% (6) believes the opposite. This result remained the same even after the second round, no consensus was reached. The experts believed that the flexibility that the smaller firms has will be the reason that they can stay competitive towards the Big 4-firms.

4.3.2.3 Digitalization effect on the audit risk

The same questions regarding the effect that the digitalization have had on the audit risk were also asked to the second panel. Regarding F12, the answers were scattered also for the second panel, although a majority of, 54% (7), believed that the effects have been substantial. For the rest of the experts, 23% (3) believed that there has been no effect towards the audit risk and 23% (3) believed that there has neither been an effect or it has not been an effect. In the second round however, some changes were made and 62% (8) believed that there have been some effects and 15% (2) believed that there are no effects present, the rest remained unchanged.
In F13, regarding new, emerging risks because of the digitalization, the experts agreed. A consensus was reached already in the first round where 85% (11) of the experts believed that new risks have emerged, only 15% (2) of the experts believed otherwise. These experts changed their opinion in the second round and the expert were unanimous, a 100% consensus was reached. What these risks constitutes of, according to the second panel, are manipulation of documents and cyber security, such as IT-risks. Furthermore, the risk of manipulated documents will only be easier along with the digitalization, according to the experts. In the question highlighted in F15, most the experts believe that this risk will only increase in relevance in the first round, 69% (9), and the result was strengthened in the second round where now only 23% (3) of the experts believed that the risk will minimize. The experts articulate that it is easier to forge the documents, by for example fake a signature or fix the numbers. These thoughts that the risk of manipulated documents will increase aligns with F16, where 54% (7) of the experts believed that such activities can be hidden from the auditor because of the digitalization. The remaining 46% (6) believed that the digitalization does not make it easier to hide these activities from the auditor. This result was only changed slightly in the next round of the questionnaire, where now 62% believed that it could be hidden from the auditor. Those who believed that such activities can be hidden argues that it is because of too little knowledge about the digitalization that enables it.

Furthermore, as mentioned above, F17 concerns the experts’ opinion on whether the digitalization makes these activities harder to execute or not. Contrary on what the first panel believes, the opinions of the second panel lean more towards that the digitalization does not make these activities harder to execute. Only 15% (2) of the experts believed in the first round of the questionnaire that they will be harder to carry through and supports this by asserting that bigger samples increase the traceability. This result remained even through the second round.

Regarding F18, the experts from the smaller firms believed that to counteract manipulation of documents in the future, user restriction is a must in the systems to prevent unauthorized access and also to educate themselves to improve their knowledge regarding the digitalization. Moreover, the remaining question in this section, F14, asked the experts if they believe that the digitalization has neutralized some inherent risks
existing before the digitalization began. The experts believed differently in the first round, where 54% (7) believed that some risks have been neutralized and 46% (6) believed otherwise. In the second round, a few changes could be interpreted as now 69% (9) of the experts believed that some risks have been neutralized and the remaining 31% (4) believed that the digitalization has not neutralized older risks. The biggest risk neutralization according to the experts is the cash management, since the cash is almost gone and bank cards/credit cards has taken over. Furthermore, the human factor is also mentioned as a risk that has decreased.

4.3.2.4 Auditing in the future

As for the auditing in the future, a full consensus was reach regarding F22, all the experts believe that the digitalization will lead to better data processing capabilities. This result remained unchanged in the second round. Furthermore, in accordance to F22, a full consensus was also reached concerning auditing tools, F23, where the experts believed that the digitalization will result in better tools for the auditors. This result was also remained unchanged in the second round. However, even though the experts believed that better auditing tools will come, there was some disagreement in the number of employees in the future, F19, the majority of the experts believed that it will either remain the same or that fewer people will be hired, 46% (6) and 31% (4) believed so. The remaining part of the experts, 23% (3), believed that more people will be hired in the future. In the second round, more experts believed that fewer people will be hired, where 54% (7) had this opinion. 31% (4) still believed that this issue will be unaffected and the last 15% (2) still believed that more people will be hired. No full consensus was reached regarding this issue.

Regarding future automatization in the field, both in the internal controls, F20, and the auditing as a whole, F21, the experts had some disagreements. In the automatization of the internal controls, 69% (9) of the experts believed that this is likely to occur, where only 31% (4) experts believed otherwise. In the second round of the questionnaire, more experts believed that the internal controls will in fact be automated, 85% (11). However, regarding the automatization of the entire audit, the experts were very skeptical towards this idea and only 8% (1) of the experts believed that this could happen. In the second
round, this expert changed his opinion and a full consensus were reached that the auditing as a whole will not be automated.

Furthermore, the experts’ opinions concerning what kind of services that will be offered in the future, F24, were almost unanimous. The bulk of the experts believed that consulting will increase in the future. Other services that will increase in importance, according to the experts from the second panel, are data analysis and environmental issues. These answers were the same in the second round as well. Moreover, a strong consensus was reached concerning F25, the importance of IT-competence within the auditing in the future. None of the experts considered IT-competence as unimportant. 85% (11) of the experts considered the IT-competence as important and relevant for the future, the remaining 15% (2) believed that it was neither good nor bad. This result was the same after the second round as well. The last question of the questionnaire, F26, concerned auditing in the future and how the auditors can prepare themselves to a more digitized future. The dominating answer from the experts in the second panel was education. They believe that education within the future aspects of the auditing will be of huge importance.
5. Analysis

The aim of this chapter is to analyse the empirical findings and connect the results to previous research to identify current issues in the field of audit and the differences among the Big 4-firms and the smaller firms. The analysis will follow the same sequence as previous sections and will be presented in the same, orderly way.

5.1 The digitalization effect on the audit process

The findings in this study indicates that there is an ongoing digitalization of the auditing profession and the audit process all together. As Bierstaker et al. (2001) emphasized, that the digitalization has affected the audit process to such extent that IT-systems were a presumption to carry out the audit. Other research has all come up with the conclusion that there has been an effect on the audit due to the digitalization as well (Ali et al. 2015; Han et al. 2016; Kempe, 2013). This aligns with the empirical result where the experts from both panels indicated that the digitalization has affected the audit and the audit process to a large extent. Furthermore, the implementation of digitalization is a very costly activity, as Hunton and Rose (2011) and Lombardi et al. (2015) emphasizes.

Despite the costs for the firms, all experts from the panels, except one, believes that the digitalization is a good thing for their firms. Both panels indicate that the Big 4-firms have more funds and resources than the smaller firms although the smaller firms have more flexibility. Since the Big 4-firms must follow the global standards of their particular firms, they also need to implement what they are told to implement. However, according to the experts, the smaller firms, with their flexibility, can implement what they want to implement. Moreover, as Bierstaker et al. (2001) further explained, the technological advancements have made the audit process much more effective, especially in the planning step. This also aligns with what the experts expressed in the questionnaire, that the importance that the digitalization has had on the planning of the audit has been immense.
Furthermore, both the majority of the experts as well as previous research indicates that the audit process has benefited from the digitalization. Researchers like Han et al. (2016), Janvrin et al. (2008) and Lombardi et al. (2015) accentuates that the digitalization of the audit process has increased the efficiency as well as the productivity of the audit. This aligns with the majority of the experts in the panels, as they indicate that the audit process has benefited from the digitalization. They mention reasons like the previous research has mentioned, for example the higher productivity and efficiency. This results in, both according to the panels and the previous research (Han et al., 2016; Janvrin et al., 2008; Lombardi et al., 2015), freed up time that can be spent on deeper analysis instead. This seems to be a general conception among practitioners as well as researchers within the field, despite the different size of the firms, that the digitalization has benefited the audit and audit process a like.

Furthermore, because of the more time that can be spent on analysis, the experts from the first panel accentuates that they can provide better quality audits. This is in line with what the previous research by Pascal & Dorian (2017) asserts, that more time can be spent on assuring quality audits. By the answers of the questionnaire, it indicates that this was not quite as important for the smaller firms as it was for the experts from the Big 4-firms. Since the Big 4-firms often have very large clients, the quality of the audit is more important since more are at stake. According to legitimacy theory, the enterprise, in this case an audit firm, wants to legitimize their behavior to manage the perceptions of its constituencies (Taylor et al., 2001). The Big 4-firms have more external stakeholders, as well as the general public, to uphold a legitimate behavior too, in comparison to the smaller firms. Therefore, it is also more important for the Big 4-firms to assure quality audits because of the reasons that the legitimacy theory lays out. This aligns with what Lee & Lee (2013) expresses, that the quality of the audit is positively related to the size of the firm. Moreover, the larger audit firms also have more incentives to uphold their legitimacy because of their brand-name and recognition, which is known world-wide.

Furthermore, with the ongoing digitalization of the field, which Kempe (2013) explains will revolutionize the whole concept of auditing, the discussion of how the audit process will look like in a few years is relevant. Most the experts in the panels believes that the audit process will be more simple in the future and less profound. Meaning that they
believe that less work will be required in the audit process. This aligns with the technological advancements that already is available for the auditors and which previous research has covered. As mentioned, as the auditing has become more efficient and productive, more time is available for the auditors, as Lombardi et al. (2015) explains. However, with the experts’ opinion that the audit process will be simpler, together with the improved tools for executing the audit, the experts also believes that the review work in the audit process will be more profound in the future. As covered above, the time can be spent on deeper analysis and in-depth review work instead of the simpler tasks, resulting in a more in-depth review work in a more simplistic audit process. Which as mentioned, assures more quality audits.

However, Lombardi et al. (2015) claims that the usage of the digitalization within the audit has failed to reach its maximum benefit because the incorporation of technology has not yet been enough. Which is in line with some answers from the experts, whom believed that the digitalization could have affected the audit process even more and furthermore, also the review work within the audit, making it even simpler. Moreover, all the experts indicated that they believe that more steps within the audit process will be automated in the future, such as the administrative steps such as the planning, which they believe will be even more automated. This is in line with what Bierstaker et al. (2001) emphasized, that the planning step of the audit would be automated. Since 2001, it has been automated to some length, but the experts as well as the authors believe that the step will be fully automated. However, the experts in both panels where very skeptical of the idea that the auditing will be replaced by artificial intelligence, as Pascal & Dorian (2017) emphasized. The experts do not believe that auditing will only be conducted by a computer, but believe that some changes will be made where AI will take over. Changes that the experts imply could be that the sample testing will be automated as well as the ticking of annual accounts. One of the experts, from a Big 4-firm, also believed that AI could take over the auditing of smaller firms, in the long-term. Moreover, the experts do not believe that AI will be as an immense contributor to the field as Pascal & Dorian (2017) implies, except for one experts who to some extent agreed with the authors. Moreover, the experts still believe that it will make some difference in the future.
5.2 The digitalization effect on the audit risk

Even though the digitalization has made many industries more efficient and has resulted in many positive aspects (Barta, 2018; Bizarro & Dorian, 2017; Chou, 2015), Dzuranin & Malaescu (2016) assert that the risks only evolve with the digitalization. However, the experts disagreed regarding the impact that the digitalization have had on the audit risk. The majority believed that there has indeed been an effect on the audit risk but some also believed that there has not been an effect. Although the experts disagreed concerning to what extent the digitalization has affected the audit risk, they were all unanimous in their opinions regarding new risks that have emerged from the digitalization. These opinions align with those of Kotb & Roberts (2011), who asserts that the technological nature of the digitalization has enabled new risks to emerge. Moreover, the experts’ conclusions regarding the new risks that has emerged are in line with previous research. For example, the experts believe that there are an increased risks of manipulation of documents, which aligns with the study of Chou (2015).

Furthermore, they also believe that cyber risks are increasing, which Barta (2018) expressed. Some of the experts also mentioned that these risks increase by the lack of knowledge regarding IT-systems, which Han et al. (2016) assert is an immense risk. To counteract all the risks, the experts believed that education regarding the digitalization is of increased importance. They assert that by increasing the knowledge regarding the IT-systems, these risks will be mitigated, which is in line with what the mentioned authors assert; that it is the only way of mitigating the risks as well. However, although both panels agreed that education is needed, they had different thoughts on further precautions as well. The first panel believed that professional skepticism is needed to counteract some of these risks, meaning that they should be skeptical towards the clients and what they say. Furthermore, the second panel believed that user restriction is a must to decrease the risk of for example manipulated documents. This is an interesting difference, which have to do that in the Big 4 review work of the bigger firms, it is a requirement to cover the user restriction in their audit, which is why the believe that skepticism is more important.

Moreover, Lombardi et al. (2015) accentuate in their study that the digitalization has mitigated risks inherent before the digitalization. This assumption matches the result from
the questionnaire, although not fully. The first panel, consisting of the experts from the Big 4, were unanimous in believing that the digitalization has neutralized some risks. Although, the second panel, consisting of the experts from the smaller firms, also believe that risks have been neutralized, it is not to the same extent as the first panel.

The risks brought up by the experts, which have been mitigated by the digitalization, are cash management and the human factor. The experts claimed that since there are mostly credit cards in Sweden now, the risk of cash is almost completely neutralized, except for smaller businesses. Therefore, to some extent, some of the experts from the smaller firms believed that the digitalization has not mitigated risks, since they usually audit these smaller firms. The Big 4 firms however, are mostly auditing bigger companies which do not have any cash management, hence the risk is mitigated. These larger companies do also have a more digitized working environment with less action from people than before, which mitigates the risk of the human factor since it is mostly computer based. Yet again, the smaller firms do not have this capacity and hence, the risk of the human factor is not entirely gone.

Furthermore, as mentioned, Chou (2015) assert that a new emerging risk is the manipulation of documents, a statement which the experts shared. However, concerning the question of whether the experts believe that the manipulation of documents will get easier along with the digitalization or not, the two panels disagreed. As Maciejewska (2014) stated, the risk of tampered and manipulated documents is widely present in the more digitized audit, asserting that the increased data processing is the reason for this. The second panel are of the same judgement, believing that the manipulation of documents will get easier, which is in line to the conclusion of Dzuranin & Malaescu (2016), that these risks only evolve along with the digitalization. However, the experts from the first panel, took a different course, asserting that the manipulation of documents will not get easier by the digitalization. The experts accentuate, as Lombardi (2015) and Pascal & Dorian (2017), that the more improved and efficient tools the digitalization brings forth, the harder it is to manipulate documents. This is the case as more improved tools and controls can easier notice when documents are not authentic. A connection regarding this issue can be drawn as the Big 4-firms, with their resources, can acquire better tools to hinder such activities as manipulated documents. The smaller firms
however, do not have the same opportunity, hence they believe that the risk manipulation of documents will only increase along the digitalization.

5.3 Auditing in the future

As a connection to the experts’ thoughts on the profoundness of the audit process in the future, where they believe that it will be more simple, most of the experts believe that the firms will be in less need of hiring people, resulting in less people being hired. The number of employees that is needed in the future also aligns with the experts’ thoughts on the data processing capabilities that the future will bring. There was a complete unanimity among the experts that the future will bring better data processing as well as better audit tools. Kempe (2013) states that the auditing is on the verge of future changes that will make an immense impact, as well as Lombardi et al. (2014) asserting that the audit will go even more towards automation and paperless audits. This is in line with what both panels explain. One of the reasons that the experts believe that better auditing tools will appear aligns with what Byrnes et al. (2018) accentuate concerning the audit tools; that the current automated tools are not sufficient enough for an efficient audit. Together with the experts, Byrnes et al. (2018) calls for better auditing tools for the future which can provide a higher level of assurances, which will ultimately also improve the audit firms’ legitimacy as well as decrease the information asymmetry, asserted in the agent theory.

Moreover, even though the panels are positive towards the possibility of better auditing tools and more efficient data processing, they are very skeptical to the assertion by Pascal & Dorian (2017), that AI will be a part of the audit. Except for one expert, both the panels were unanimous in their assumption that the audit will not be taken over by artificial intelligence in the future. They do however, believe that AI will play some role in the future of the audit, and thereby partly agreeing with Pascal & Dorian (2017), even though they are skeptical to what extent the authors intend that AI will take over. Furthermore, Wagner (2016) implies that the audit will lean towards a more automated work in the future, thanks to the technological advancements that have already taken place within the field but also the advancements to come. The experts agree with Wagners (2016) notion
to a larger extent than the one described above, since they do believe that better auditing tools will come.

In connection to the emerging risks, the experts had different opinions in the roles that the risks play to the audit, as described above. Barta (2018), Chou (2015), Han et al. (2016), Lombardi et al. (2014) and Wagner (2016) accentuates that the audit will focus more towards areas with higher risk, which is contradictory to what the experts in the second panel believes. An audit which is more focus towards areas of risk will ultimately lower the risk, however the experts from the second panel believed that the risks will not decrease. Nonetheless, it does align with the first panel, which indicated that the risks will decrease due to the better tools the audit will take forth in the future.

As the audit profession advances, most experts believe that new services will be offered as time will be freed up due to better auditing tools. Concerning what services that might be offered within the future was given as a unanimous answer by the panels, where everyone believed that the auditing would shift more towards consulting. This aligned with Kempe (2013) thoughts, that the auditing and especially the Big 4-firms, would offer consulting to expand their businesses. Regarding the smaller firms, it was asserted that they would also offer more consulting services in the future. However, this has not been mentioned in any prior research. This might be the case since the smaller audit firms often target smaller companies, which do not have as automated systems as larger companies might have. Thus, require more time since the audit in that case cannot benefit from the improved tools that the digitalization has resulted in.

Furthermore, as the digitalization is bound to continue, some researchers have covered the importance to adapt to a more digitized future (Barta, 2018). According to the panels and their thoughts on the future, most of the experts believe that further enhancements in their knowledge regarding IT-systems and to be open for the changes in order to adapt, are the key solutions. As Barta (2018), Chou, (2015) and Han et al. (2016) asserts, the auditors lack sufficient knowledge, which agrees with what the panels believe. To solve this issue, the experts from both panels believes that education is a must, aligning with the words of Lombardi et al. (2015) who expresses the importance of proper training to face the digitalization. Furthermore, in connection to the audit risks, the increased
knowledge regarding IT-systems may lead to mitigation of certain risks (Byrnes et al., 2018), which is why the experts also believe that training is a must.

5.4 Differences between the Big 4-firms and the smaller firms

As already explained and discussed in previous sections, the Big 4-firms and the smaller firms perceive the digitalization’s effect differently in some cases, but they also agree in other cases. For instance, they perceive the impact of the digitalization on the audit process similarly, with similar opinions and thoughts. They do not however, assume the same concerning the increased quality that the digitalization enables, which the first panel believe is more important in accordance to the legitimacy theory as well as the agent theory. Concerning the audit risk, some perceived differences could also be noted, like for example their thoughts on how certain risks will play out in the future, for example, the auditors lack of IT-knowledge may lead to decreased detection risk regarding manipulated documents. As the auditor might decide upon the sufficient measures to detect those documents.

However, the experts were also asked more precise question concerning the differences among the two panels. Both panels did not perceive the digitalization of their respective firms to be cost-effective, where only a few believed that it was cost-effective. For the first panel, this is understandable because they are part of a global network and most of the times must follow the same implementations. The smaller firms however, who explained that they are more flexible than the Big 4-firms and can decide over their own implementations, believed that the digitization was not cost-effective is surprising. This might have to do with the fact that they do not need all the new systems and tools, because they do not have much use of them. These tools and systems may not be as applicable towards most of their clients as they are for the Big 4, since the second panel have more small firms as clients who are not yet as digitized.

These thoughts of the experts also align with the advantages that Big 4 has over the smaller firms when it comes to the implementation. The experts from both panels explained that the Big 4-firms, with their superiority in resources and higher number of employees, have a big advantage to implement new tools and systems. Since the smaller
firms do not have the same capacity, they believe that the implementation gets less cost-effective. However, they do point out that they are more flexible than the Big 4-firms, which some experts from the first panel also note. This may be a bit contradictory, one might believe that with the flexibility to do as you wish, you should be able to make the implementation cost-effective. However, as Hunton and Rose (2011) and Lombardi et al. (2015) explain, the reason why not everything is digitalized is because of the high cost. Which may also be why the second panel, as well as the first panel, believe that the digitalization is not cost-effective.

As both panels believe, the digitalization is expensive. This will cause, according to the first panel, the loss of competitiveness for the smaller firms. They accentuate that the smaller firms will lose competitiveness towards the Big 4 because they lack the resources for future investments, which they emphasize will be very costly. The first panel believe that the smaller firms lack the capacity to remain competitive as more businesses will get more digitized. However, the second panel emphasized both that they will be less competitive and that they can remain competitive because of their flexibility. But in connection to the cost-efficiency, the smaller firms need to improve their implementation of the digitalization in order to remain competitive. The Big 4-firms have the resources to invest, they do not always have to be as cost-efficient as the smaller firms.
6. Conclusion

The aim of this chapter is to summarize the results and analysis of the study and to provide an answer to the study’s purpose.

The purpose of this thesis is to examine the perceived differences between Big 4-firms and smaller firms concerning the digitalization and how the digitalization affects the audit process and audit risk in Sweden. The focus of the study is on both the audit process and the audit risks and how the firms perceive that these two have been affected. To find a relation and a possible explanation on how these two factors are perceived by the two panels, comparisons between them as well as further analysis has been made.

As the results and analysis indicates, the perception of the digitalization of the audit process and the audit risks within the Big 4-firms and the smaller firms, are somewhat alike but not ultimately. Both panels believe that the digitalization has affected the audit process and are positive towards the idea that new and improved auditing tools will appear in the future. Moreover, they agree that the digitalization has made the audit process more efficient and has increased the productivity. However, the first panel believe that this is important for the increased assurance of quality audits, but this was not as important for the second panel. Despite this, the evidence points in the direction that both practitioners as well as previous research within the field, believe that the audit and audit process has benefited from the digitalization.

Furthermore, there were an unanimity among the experts from both panels in their beliefs that the auditing will shift more towards consulting in the future. This aligns with the thoughts that the audit process will be simpler and that more time is available.

More differentiated opinions could be noticed regarding the different risks that emerges with the digitalization and which affects the three risks that constitutes the audit risk. Both panels agreed that new risks are present because of the digitalization, but they believed differently concerning the counteraction of these risks. The first panel do not consider the
increased risks of the digitalization as a problem because they trust the audit process and the improved tools. The second panel however, believed that these risks will be a problem in the future. Although some disagreement was present among the two panels regarding the risks and what they might cause in the future, they were unanimous in believing that education and knowledge is a must in the future.

As this thesis aimed to investigate, there is indeed a perceived difference among the Big 4-firms and the smaller firms regarding the digitalization effect on the audit process, although not a substantial one. Furthermore, as the results indicates, there is also evidence that the two panels view the emerging risks from the digitalization differently and have different ways of counteracting these risks.
7. Discussion

The discussion chapter covers further discussion on the limitations of the study as well as suggestions for future research.

This study focuses on the perceived differences concerning the digitalization’s impact among the Big 4-firms and the smaller firms. It contributes to the literature and fills the gap regarding this issue in Sweden since no previous research have covered this area. The empirical findings contribute to the understanding of the thoughts that the practitioners have concerning the digitalization’s effect on both the audit process as well as the audit risk. The study also explains the impact of the digitalization so far and what the impacts are likely to be in the future as well as providing the different thoughts of experts within the field. However, despite from providing concrete evidence that there are perceived differences among the Big 4-firms and the smaller firms, this study is not free from limitations. The most substantial one was the fact that when this study was conducted, the practitioners in the field of audit had an immense amount of workload. Because of this, the brainstorming session exercised early in the study was not ultimate, since not every one of the experts could participate. Moreover, it was also difficult to find auditors who was willing to participate. This might have affected the quality of the answers given in the questionnaire, because the auditors are under a lot of pressure during this time. Since the study compared the Big 4-firms with smaller firms, a further limitation is also that the outcome of the study was predictable due to the different circumstances of the firms, with regards to the resources.

Furthermore, a suggestion for future research within this subject would therefore be to conduct the research during a time-period where the workload of the auditors is less. This would lead to a more substantial brainstorming session and likely more quality answers to the questionnaires. Further suggestions for future research are to investigate the perceived differences among the Big 4-firms only, which would give a clearer indication on how the largest firms within the field views the digitalization. Moreover, comparing the audit firms between countries would be interesting in regards to the different levels
of digitalization that exists in the different countries. Knowledge gained from these kinds of studies would generate a perception of the success of the digitalization within the different audit markets. Furthermore, it would give indications on where the firms succeed with the digitalization the most and could therefore be used as a guide in the implementation of the digitalization for less successful firms, in regards to the digitalization.

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Appendix

Appendix 1 – Topics discussed during the brainstorming session

Relevant and hot topics that were mentioned in the session was: the digitalization effect on the audit process, differences between the Big 4-firms and smaller firms, audit risks and threats and lastly the auditing in the future. Based on these four topics covered in the brainstorming session, the questionnaire was conducted.

Appendix 2 – Questionnaire

*Digitalization effect on the audit process*
Q1/F1 Are you positive towards the digitalization effect on the audit? - If not, please provide an example/examples.
Q2/F2 How much have the digitalization affected the audit process?
Q3/F3 How will the audit process be in the future?
Q4/F4 How is the review work within the audit process going to change in the future?
Q5/F5 How much do the audit process benefit from the digitalization?
Q6/F6 Do you believe that some step/s within the audit process will be automated in the future? If yes, which?
Q7/F7 Do you believe that the review work which is executed within the audit process (Such as fieldwork) will be abolished in the future and be replaced by artificial intelligence? If yes, how so?

*Differences between the Big 4-firms and the smaller firms*
Q8/F8 How cost-efficient is your firm in the implementation of the digitalization?
Q9/F9 Do you believe that the Big 4-firms have any advantages, compared to the smaller firms, in the implementation of new systems which the digitalization has brought forth? Follow up question - Which advantages/disadvantages do the smaller firms have towards the Big 4?
Q10/F10 Do you believe that the firm you work for benefits from the digitalization?
Q11/F11 Do you believe that the digitalization will make it harder for the smaller firms to stay competitive compared to the Big 4-firms? If yes, give an example.

*Digitalizations effect on the audit risk*

Q12/F12 How much have the digitalization affected the audit risk?

Q13/F13 Do you believe that new risks have emerged because of the digitalization? If yes - provide examples.

Q14/F14 Do you believe that the digitalization have mitigated risks inherent before the progression of the digitalization?

Q15/F15 Do you believe that it will be easier to manipulate digital documents because of the digitalization? If yes, in what way?

Q16/F16 Do you believe that the digitalization have made it easier to hide irregular/illegal activities from the auditor? If yes, in what way is it easier?

Q17/F17 Do you believe that the digitalization have made it harder to execute such activities mentioned above? If yes, in what way is it harder?

Q18/F18 How shall you counteract the risk of manipulated documents in the future?

*Auditing in the future*

Q19/F19 Do you believe that the digitalization will lead to more people needed/hired or less?

Q20/F20 Do you believe that the audit of internal controls will be automated?

Q21/F21 How big is the likelihood that the entire audit will be automated?

Q22/F22 Will the digitalization lead to even better data processing capabilities?

Q23/F23 Do you believe that new and improved audit tools for the data processing will be developed?

Q24/F24 Do you believe that other services will be offered more in the future?

Q25/F25 Do you believe that increased IT-competence will be necessary for auditors in the future?

Q26/F26 How can auditors prepare themselves and deal with a future that is increasingly digitized?