UMEÅ UNIVERSITY

Audit Teams and Audit Quality

A Sustainable Development Goal Perspective

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Table of Contents

Abstract v

Introduction 1

Audit Teams and Their Context 1

Audit Quality 4

Purpose 6

Research Questions 6

Methodology: Positioning in the Field 8

Methods and Ethics 9

Interview and Questionnaire Instruments 10

Sample Selection 10

Data Collection 13

Data Analysis 14

Ethical Reflections 16

Review and Conceptual Analysis 16

Audit Quality in Audit Teams 17

SDG 17: How well do audit teams achieve the SDGs? Audit Quality and the Balanced Scorecard Framework 17

SDG 16: What are the audit team determinates of AQTBs? Audit Quality Threatening Behaviour 18

SDG 17: How well do audit teams achieve the SDGs? Sustainability Accounting and Accounting for Sustainability 20

Audit Teams 21

SDG 16: How are audit teams structured? 21

SDG 16: How do audit teams influence audit judgements and decisions? Hierarchical structures 23

SDG 8: Why do audit team structures influence audit outcomes? Power 24

SDG 10: How do audit team structures function? Status 25

SDG 8: Why do audit team structures influence audit outcomes? Trust 27

SDG 3: Which and how do audit team inputs trigger audit team stress? Team Stress 28

SDG 3: Which and how do audit team processes trigger audit team stress? Intrinsic Motivations 29

SDG 16: Is audit team distance associated with AQTB? Team Distances ...30
SDG 10: Is audit team distance associated to AQTBs? Subjective Distance 31
SDG 8: Is audit team distance associated with AQTB? Communication Distance 33
SDG10: Are audit team equality perceptions associated with AQTB? Deindividuation and Social Identity 34
SDG 5: Are audit team gender equality perceptions associated with AQTB? Gender, Gendering and Gender Equality 35
Conclusion and Contributions 36
Limitations and Future Research 40
Acknowledgements 42
References 43
Appendix 57
Interview Guide 57
Full Questionnaire 59
Table 2: Descriptive Statistics 75
Article 1 Opening the Black Box of Audit Teams: Qualitative Evidence of Composition and Role Structure 79
Article 2 The Triggers and Consequences of Audit Team Stress....123
Article 3 Audit Team Distances and Audit Quality Threatening Behaviour....161
Article 4 Audit Team Equality and Audit Quality Threatening Behaviour....205

Figure 1: Audit Team model as a cyclical process....18
Table 1: Research Questions and the UN's SDGs 7

Abstract

This dissertation investigates the influence of audit teams on audit quality and produces a conceptual analysis through the perspective of the Sustainable Development Goal (SDG) framework (United Nations, 2017). Four articles study four different audit team factors, namely audit team hierarchical structures, team stress, team psychological distances and team equality. The conceptual analysis approach has been chosen to address the increasing demand for a better understanding of the accounting research role in sustainable development (Bebbington & Unerman, 2018), which drove the research problem focus in each article. This dissertation summarises the work that has been conducted in the four studies and also makes propositions for an SDG perspective on the work and for future research based on their findings.

A unique set of data has been collected that contains information about auditors who have worked on the same engagements in the same team. The data has been collected by interviews and questionnaire surveys conducted in a field study, which have provided information that can be analysed using a qualitative and quantitative approach. The data has also included proprietary information about audit team client characteristics from a Big 4 audit firm. More specifically, this research has contributed to audit team, audit quality and the role of accounting in the achievement of the UN's SDGs by answering several research questions. Results find that hierarchical power and status as well as trust play a role in audit team structure; audit team stress triggers and consequences include 1) team planning, competence, autonomy, 2) team changes, coordination and leadership, communication and cooperation and team support, and 3) team stress cognition, physical and affective forms; and, audit team psychological distances and equality has a relation to team behaviour. Findings can contribute to an understanding of equality and well-being in audit teams and therefore to the audit team's achievement of the UN's SDGs.

Keywords: audit teams, team structure, team stress, team distance, team equality, team sustainability

Introduction

The overall purpose of this dissertation is to investigate the influence of audit teams on audit quality and produce a conceptual analysis through the perspective of the Sustainable Development Goal (SDG) framework (United Nations, 2017). Four articles, all of which are presented in the Appendix, have been developed to investigate four different audit team factors. The conceptual analysis approach has been chosen to address the increasing demand for a better understanding of the accounting research role in sustainable development (Bebbington & Unerman, 2018), which drove the research problem focus in each article. This dissertation summarises the work that has been conducted in the four studies and also makes propositions for an SDG perspective on the work and for future research based on their findings.

Audit Teams and Their Context

As the quality of and trust in audits have been questioned (IAASB, 2014), new knowledge about audit quality is needed to better understand the audit and the impact of audit teams on it. Previous audit quality research has investigated many important, relevant aspects of audit work at a firm, office and individual levels (DeFond & Zhang, 2014; Knechel, Krishnan, Pevzner, Shefchik, & Velury, 2013; M. Nelson & Tan, 2005). However, audits are mostly performed in a team, where brainstorming sessions are required and collaboration is necessary. As yet, very little research has investigated the actual practices of audit teams[1], and evidence relating to audit teams has been considered a "black box" (Francis, 2011) in audit research for more than 20 years (Rich, Solomon, & Trotman, 1997). This could be due to the difficulty in obtaining data from audit firms, in that data is not publically available. In this respect the data collected in this research is unique. A team level analysis can delve deeper by an analysis of a team's dynamics and how this influences audit quality.

Audit teams have been described as a "set of auditors who have been assigned collectively to plan and execute the audit" (Rich et al., 1997). We know that audit teams always include an Auditor in Charge (AIC) and an Audit Manager (AM), although the number of other managers and associates can vary depending on the nature of a firm's hierarchical structure (Bamber, 1983; Rich et al., 1997). Research has found that audit teams outperform individual auditors on an audit engagement due to the influence of team member interaction (Solomon, 1982; Trotman & Yetton, 1985), which indicates the importance to have a better understanding of audit team dynamics and their influence on audit quality. At Big 4 audit firms, audit tasks are mostly conducted by the associates and managers, while the AIC reviews the essential items that are considered most at risk (Deloitte AB, 2018; EY, 2018; KPMG, 2018; PWC, 2018). At smaller audit

[1] Two articles were published recently by Cameran et al. (2017) and Hossain et al. (2017), and another was published almost 30 years ago (Dirsmith & Haskins, 1991).

firms, tasks can be conducted and reviewed by more senior auditors, simply because fewer staff are employed. Audit team members can be certified auditors, auditors in training and those with specialist skills in for example tax and IT (Deloitte AB, 2018; EY, 2018; KPMG, 2018; PWC, 2018). Although audit quality has traditionally been understood in terms of auditor competence to do the work and independence to make an assurance of any possible material misstatements (DeAngelo, 1981), audit teams also need a team level competence and independence that can be influenced by different team factors due to team interactions.

In Sweden there are small audit firms, audit firms that are regarded as second tier because they are still growing in size, and Big 4 audit firms (EY, PWC, KPMG and Deloitte), which conduct more than 90% of the audits in Sweden (Willekens, Dekeyser, & Simac, 2019) and operate around the world. According to each firm's financial reports for 2017-2018 in Sweden, PWC had the highest revenue, followed by EY, Deloitte and KPMG, respectively. PWC has 3,900 employees, EY has 2,541, Deloitte has 1,318 and KPMG has 1,377. Despite their statements of commitment to ethics and anti-corruption, several audit firm scandals have affected all the stakeholders in the auditing profession (Cullinan, 2004), including Prosolvia, HQ Bank and Kraft & Kultur (FAR, 2016). Public concern for the auditor's role in the 2007 banking crisis has increased (Bedard, Deis, Curtis, & Jenkins, 2008; Sikka, Filling, & Liew, 2009). Also, several large scandals in the UK have lead authority investigations (CMA, 2019) to find that audit services need to be separated with other services that audit firms provide in hope for better independence. This separation of services questions then who will conduct the audit of integrated reports of financial, society and environmental information in annual reports. If audit teams need to audit sustainability accounting information are they accountable to sustainability. Also, suggestions are made by the CMA (2019) to include several audit firms on big audit clients in order to increase audit quality. Altogether, the concern for continuous scandals suggest that auditors and audit firms play a significant role in the sustainability of the economy and society. The management and balancing of the three pillars of sustainability, environmental, social and economic (Bruntland, 1987) is complex in that it not only includes the work that audit teams need to consider through the audit of their clients reports, but also the ways in which audit teams play a role in creating a sustainable audit team that can produce sustainable audit quality.

As the audit industry in Sweden adapts to changes in the audit process and grows rapidly (FAR, 2005), audit team dynamics will also need to adapt to the new challenges and opportunities of continuous audit through the digitalisation of the process. The challenge to incorporate sustainability perspectives into the audit work in the audit industry has led to a need for audit teams to be able to understand sustainability for the audit as well as themselves (Adams & Larrinaga-González, 2007; Gollan, 2000). According to Hahn et al. (2015), when an organisation experiences change in an attempt to create more sustainable practices, positive and negative tensions can arise that lead to behavioural changes. Understanding what sustainability means in the workplace amongst colleagues to improve the quality and accountability of the audit should lead to

improved actionable changes in the audit firm and the audit industry. Thus, the behaviour and actions of audit teams play a vital role in the sustainability of audit work, audit firms and the audit industry.

According to the SCB (2018) there are 330,574 small enterprises, about 7,000 small medium enterprises (SMEs) and 1,000 large enterprises in Sweden, which indicates that there may be more smaller audit teams than very large ones. In their financial reports of 2017-2018, audit firms in Sweden have shown an increase in audit services for non-public interest entities (PIEs) and their mandatory audits of PIEs. This study includes relatively large private corporations (non-PIEs) and publically listed firms (PIEs) that are required to have an audit. SMEs make up most of the non-financial business economy in the EU (Arena & Azzone, 2012). Most small and SMEs in Sweden are required to use sustainability accounting due to Swedish legislation (Frostenson & Helin, 2018), which has been influenced by an EU directive (2014/95/EU). This legislation has been problematic for many SMEs due to lack of resources to conduct such reporting. Companies in Sweden have therefore needed to use the services of those who are knowledgeable about this change in the accounting environment. Audit firms in Sweden have increased their presence in the assurance and consulting capacity of sustainability accounting in order to aid the SMEs. An example of this includes the development of accounting tools (PWC, 2015) that help businesses to report on their achievements of the UN's SDGs (2017) through the use of the Global Reporting Initiative (GRI) guidelines[2] for sustainability accounting.

The International Auditing and Assurance Standards Board (IAASB) has introduced audit quality guidelines in order to establish ways to improve the quality of the audit and the public's confidence in audit work. The guidelines include accuracy of information and the reduction of information risk by forming audit teams that show "appropriate values, ethics and attitudes" (IAASB, 2014), have appropriate competence and are able to interact appropriately with all stakeholders. Also, the UN (United Nations, 2017) has produced a set of 17 SDGs in an attempt to increase participation and progress in the next 15 years. The SDGs have been designed to incorporate all three sustainability, economic, social and environment pillars. This dissertation discussion concentrates on the social dimension of equality and well-being. The accounting profession is considered to have an important role to play in the pursuit of these SDGs (Bebbington & Unerman, 2018). Accounting research has investigated the sustainability goal of equality (Arnold, 2010; Haller, van Staden, & Landis, 2016; McPhail, Macdonald, & Ferguson, 2016) through work on the responsibility of accounting regulatory boards and accountability of corporations, including how corporations account for their sustainability activities in annual reports. However, accounting research can do much more to develop knowledge in order to achieve these SDGs and increase the impact of its research on regulatory boards and society as a whole.

[2] An SDG compass has also been developed by the Global Reporting Initiative (GRI) in order to help businesses better understand the guidelines set by the GRI and the UN's SDGs.

The Big 4 audit firms (EY, PWC, KPMG and Deloitte) promote a socially responsible workforce on their internet webpages in an effort to assure investors and the public of their work. However, in a profession that is known to be stressful (Alderman & Deitrick, 1982; Fogarty, Singh, Rhoads, & Moore, 2000; K. J. Smith, Emerson, & Boster, 2018), scandalous, and experiences a high turnover (Coram, Glavovic, Juliana Ng, & Woodliff, 2008; Sweeney, Pierce, & Arnold, 2013), it is reasonable to examine the extent to which audit firms have achieved the SDGs. In a review of sustainability accounting research, Adams and Larrinaga-González (2007) find that there is a need for research that addresses why, how and what kind of situations allow for a lack of sustainability performance and suggest that an investigation into the process, structure and behaviour of those accountable for sustainability performance would be beneficial. Supporting this, Bebbington and Larrinaga (2014) suggest that research through the perspective of sustainability that studies the situations that organisations operate in can be beneficial for future accounting practices. This disseratation suggests that those who are held accountable for the assurance of accounting reports, namely audit teams, can give insightful evidence that can begin to address this important avenue of knowledge.

Sweden, where the data was collected, is becoming increasingly less homogenous. According to the Swedish statistics agency (SCB, 2019), 56.8% of its citizens have a foreign birth country and 24.9% have foreign born parents, while 9.1% of residents have a foreign citizenship as of 2018. Research (Tarvainen, 2018) has found that this is due to an increase in immigration and therefore an increase in immigrated women who give birth in Sweden, which has meant that there are more births by foreign born citizens and residents than Swedish citizen births. The OECD (2015) recognised that Sweden has experienced one of the largest rises in inequality among the richer countries since the 1980s. Therefore, Sweden is a setting in which changes in the nation's population can determine whether people are treated equally or not and the changes in their well-being. This conceptual analysis argues for the sustainability goal perceptive through the goals[3] for well-being (SDG4), gender equality (SDG 5), decent work for all (SDG 8), reduced inequality (SDG 10), peace and justice and strong institutions (SDG 16) and partnerships for the goals (SDG 17), with a discussion of the findings in the four separate studies. An analysis of the sustainability of the audit team through the SDGs can contribute to knowledge about the quality of the audit team, its work and its influence on the audit profession.

Audit Quality

A well cited definition of audit quality is that auditors have the competence to detect and the independence to report material misstatements (DeAngelo, 1981). However, this has been criticised for being too simplistic, because defining audit quality is a complex matter. The purpose of an audit has been recognised "to

[3] See the research questions for more information.

enhance the degree of confidence of intended users in the financial statements" (IAASB, 2014) by giving an opinion that "present fairly, in all material respects" (IAASB, 2014) or give "a true and fair view" (IAASB, 2014). Traditional audit quality measures, such as weighted average accruals, used in archival research have been criticised for using proxies that do not fully capture the quality variations in the audit, because they contain measurement errors, bias and lack consensus (Causholli & Knechel, 2012; DeFond & Zhang, 2014). It is argued that alternative audit quality measures should be studied.

Subsequently, the audit literature has developed a balance scorecard framework of audit inputs, audit process and audit context as audit quality antecedents, plus audit outcomes that are the consequences of the audit (Francis, 2011; Knechel et al., 2013). This framework has helped to better understand the archival, experimental and field study evidence that has shown a variety of results that link audit firms, audit offices and individual auditors to different inputs, process, contexts and outcomes of the audit and to describe what influences the quality of the audit. However, much of this work has documented what audit quality is not, rather than what it is (Knechel et al., 2013). The psychology literature (Ilgen, Hollenbeck, Johnson, & Jundt, 2005) has developed this traditional input-process-output model to include the cyclical nature of teams, where outputs influence the next cycle of inputs in a continuous cyclical manner. This research makes use of the cyclical model to contribute an audit team framework (see Figure 1) to audit research by investigating audit team inputs, processes and contexts that in turn influence the outcome of a team's work, which is measured as how well the team achieves the sustainability goals in a cyclical manner. In doing so, this research suggests that a sustainable audit team will provide a sustainable audit quality and therefore proposes that good audit quality is a sustainable audit.

Audit Quality Threatening Behaviour (AQTB) is a set of unethical behaviour that is well documented in the audit literature (Buchman & Tracy, 1982; Kelley & Margheim, 1990; Margheim & Pany, 1986; Otley & Pierce, 1996; Raghunathan, 1991; Svanberg & Öhman, 2016; Sweeney et al., 2013). These kinds of behaviour can be interpreted as an antecedent to audit quality, in that they describe what can happen during the process of the audit. AQTB includes the under reporting of time and premature sign-off, the biasing of sample selection, the unauthorised reduction of sample size, a greater than appropriate reliance on client work, an acceptance of weak client explanations, failure to properly document work and failure to research an accounting principle. To explain further, for example, under reporting the time it takes to conduct an audit can threaten the quality of the audit because it can shorten the time budget of the next year's audit, which can reduce the quality of the future audit. It can also create competitiveness between auditors, which can lead to other threatening behaviour. These kinds of behaviour are not illegal, but are seen as unethical and can threaten the quality of the audit.

As it is the audit team that has been analysed, this study does not use traditional mainstream measurements of audit quality, but instead investigates audit team outcomes that can influence the quality of teamwork. This analysis

proposes that unethical behaviour can also threaten the audit's sustainability, since results in the separate articles have shown that unethical behaviour can influence team equality and well-being. Overall, this study investigates the experience of audit team well-being and equality as determinants of AQTB in order to better understand the audit team's influence on audit quality.

Purpose

The disseratation positions itself in the audit team research field by firstly investigating audit team characteristics and audit team determinants that influence audit quality in four separate articles. As a sub-purpose, this discussion provides a conceptual analysis through the perspective of the SDG framework.

Articles 1 and 2 contribute to knowledge about audit team structures and team stress, respectively, through a qualitative analysis of interview data from practising audit teams. Articles 3 and 4 contribute to knowledge about audit team pyschological distances and equality through a quantitative analysis of questionnaire and proprietary data from practising audit teams. The articles discuss theories and concepts that argue for factors of audit team inputs, process, context and outputs that can be perceived through the perspective of the SDGs as influences on team equality and well-being (see Figure 1).

More specifically, article 1, "*Opening the "Black Box" of Audit Teams: Qualitative Evidence on Composition and Role Structure",* discusses audit team composition and role structure through a description of the hierarchical power and status inequalities, the sustainability of ambidextrous structures and how this influences team behaviour. Article 2, "*The Triggers and Consequences of Stress in an Audit Team",* discusses audit team well-being through the experience of team role stress, intrinsic motivation and how this influences team behvaiour.

Article 3, "*Audit Team Distances and Audit Quality Threatening Behaviours",* delivers the audit teams' perspectives on the inequalities of subjective and communciation distances within the audit team and their association to individual AQTB. Article 4, *Audit Team Equality and Audit Quality Threatening Behaviour*, provides the audit teams' perspectives on the inequalities of team deindividuation, gender equality and their asociation with AQTB.

Research Questions

Table 1 presents the research questions that are empirically investigated in each article and then connects each question to this conceptual analysis with the relevant SDG. The overall research questions are presented in column 2; the SDG number and title relevant to each research question are presented in column 3 and the relevant SDG targets set by the UN are presented in column 4. PWC and KPMG clearly state which SDGs they work towards on their websites, whereas EY and Deloitte have information about how they can help their clients with sustainable accounting reports.

Article	Research Questions	SDG	Targets set by UN (2017)
2	Which and how do audit team inputs trigger audit team stress? Which and how do audit team processes trigger audit team stress?	3 Health and well-being[4]	Ensure healthy lives and promote well-being for all
4	Are audit team gender equality perceptions associated with AQTB?	5 Gender Equality[5]	Achieve gender equality and empower all females
1 **3**	Why do audit team structures influence audit outcomes? Is audit team distance associated with AQTB?	8 Decent work and economic growth[6]	Promote sustained, inclusive…full and productive employment and decent work for all. technological upgrading and innovation, focus on high-value added and labour-intensive sectors
1 **3** **4**	How do audit team structures function? Is audit team distance associated with AQTB? Are audit team equality perceptions associated with AQTB?	10 Reduce inequality[7]	Empower and promote the social, economic and political inclusion of all
1 **3** **1-4** **1-4**	How are audit teams structured? Is audit team distance associated with AQTB? What are the audit team determinates of AQTB? How do audit teams influence audit judgements and decisions?	16 Peace and justice and strong institutions[8]	Develop effective, accountable and transparent institutions at all levels. Ensure responsive, inclusive, participatory and representative decision-making at all levels.
CA[9]	How well do audit teams achieve the SDGs?	17 Partnerships for the goals	Multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of SDGs

Table 1: Research Questions and the UN's SDGs

[4] KPMG states this as its goal on its website.

[5] PWC; KPMG states this as its goal on its website.

[6] PWC, KPMG states this as its goal on its website.

[7] KPMG states this as its goal on its website.

[8] KPMG states this as its goal on its website.

[9] CA= conceptual analysis in this dissertation.

The UN's targets are just some of the ways in which it hopes to encourage all types of organisations to work towards a sustainable future. As sustainability is a holistic theory, the targets can also be interpreted as an important factor at all different levels from the macroeconomic level of political policy to the local levels of how a single organisation accounts for sustainability and the SDGs. The research questions attempt to study some of the SDGs through the targets at an audit team level in order to form a dissertation structure that can "map the problem space" (Bebbington, Russell, & Thomson, 2017, p. 27) and challenge team perspectives about the SDGs (Adams & McNicholas, 2007).

SDG 3 is about well-being for all, which has been investigated at an audit team level through audit team stress in article 2. SDG 5 is about gender equality, which has been investigated at an audit team level through audit team gender equality in article 4. SDG 8 is about decent work for all, which has been investigated at an audit team level through audit team structures, stress and psychological distances in articles 1, 2 and 3, respectively. SDG 10 is about the reduction of inequality, which has been investigated at an audit team level through audit team structures, psychological distance and team equality in articles 1, 3 and 4, respectively. SDG 16 is about strong and just institutions, which has been investigated at an audit team level through audit team structures in article 1, and behaviour and its influence on decisions and judgements in all four articles. SDG 17 is about partnership for the SDGs, which is the discussion in this dissertation and therefore indirectly involves all four individual articles.

In the next section, the methodology and methods used in each article are discussed. A literature review and conceptual analysis is then presented. Finally, conclusions and contributions complete this dissertation. The four articles are available in the Appendix.

Methodology: Positioning in the Field

Empirically, the investigation addresses a new area of audit research through audit team knowledge, the use of different research methods and contributions to audit quality research. Observable quantitative and subjective qualitative data has been collected. Conceptually, the research has tried to define what an audit team is and even what audit team quality is in an attempt to contribute to audit research's concept of audit quality. Most audit quality research has so far defined and measured what audit quality is not, or what threatens audit quality, but not what audit quality actually is (Knechel et al., 2013). Therefore, I believe that I have positioned this research with new and unique data sets and have delivered new empirical and conceptual contributions to the audit team and audit quality literature.

As very little is known about audit teams (Cameran, Pettinicchio, & Detillo, 2017; Francis, 2011; Rich et al., 1997) and much can be learnt from engaging with practice (Adams & Larrinaga-González, 2007; Bebbington et al., 2017), a field

study has been conducted to learn from the practical perspectives of real audit teams. A lot of research has investigated work teams in the psychological and organisational behavioural literature that can help to explain and guide our understanding of audit teams. This study reflects on why, what and how audit team determinants might influence audit team behaviour through the problem space of the UN's SDGs, accounting for sustainability and by using different methods to engage with practising audit teams.

I have chosen to use different methods because I understand that knowledge can come from the meaning of words as well as from a commensuration of facts (Espeland & Stevens, 1998). Using both methods gives more rich information about the research than only using one (Denzin & Lincoln, 2011; Tashakkori & Teddlie, 2010). Therefore, the interview data will help to explore our understanding by finding meaning in the actors of the audit context, and the quantitative data can help to explain the details by investigating different relationships and variations between significant variables that arise from the interview data. I have chosen to position the research in this way due to its nature and what I believe is needed to answer the research questions. This is typically understood as a pragmatist research philosophy (Denzin & Lincoln, 2011).

Engagement with local audit teams was initiated through a group of practising auditors that meet to discuss research with our accounting section[10] each term. We exchange information about our research and they present developments of importance in their daily work. Together we aim to deliver research of actionable effort towards future audit advances. Due to the contacts we have made through our biannual meetings we have gained access to several audit teams and other auditors working with research on audit teams. This has generated interest in the participating audit firms. Since starting the research we have met to discuss the results and future participation in developing projects. Therefore, the study aims to contribute both academically and to the accounting profession.

Methods and Ethics

Qualitative interviews were conducted in stage 1 of the data collection and were used in article 1, on team structures, and article 2, on team stress. Questionnaire and proprietary data was also collected for stage 2 of this research and was used in article 3, on team distances, and article 4, on team equality. Although each article has its own topic, they all involve the team behaviour known as Audit Quality Threatening Behaviour (AQTB) as a measure of an audit quality antecedent. . This section compares the components of the method that differ due to the qualitative and quantitative research design methods and discusses the common features of the methods, for example the dependent variable AQTB.

[10] Accounting and Finance section of USBE at Umeå University.

Interview and Questionnaire Instruments

The preliminary instrument used for the interviews was based on prior literature. A pilot test was conducted with three different partners at two different Big 4 audit firms that had not taken part in any of the audit team engagements. Modifications were made and 5 main semi-structured interview questions were formulated, all with follow-up and probing questions (see the interview guide in the Appendix). The participants were also encouraged to provide any other information that they thought was relevant to the specific team experience and additional information in general, so that we could compare the experiences in the different teams and identify what was specific to a certain team context. The interview instrument evolved during the data collection period as we recognised frequent and prevalent topics arising from previous interviews, which led to one revision of the instrument at the midway point that reduced the number of minor probing questions and added a question about a trend to move practical work away from the client's workplace.

The questionnaire was in English, which was suggested by the partners as being appropriate for the participants. The questions were inspired by Gibbins and Qu's (2005) study on experiential questionnaires. This design elicits descriptions of an expert's experience with details about how they function in their context, which is said to be beneficial when investigating influences on behaviour. Thus, the audit teams were first asked to think about the specific audit team engagement so that all the audit team members answered the same questions about the assigned engagement experience. The said experience was made as recent as possible, from July 2015- June 2016, so that recollection of the engagement experience would be promising. Then, questions about the major concepts used in each article were provided. The major concepts were measured by using items that were already established in the literature, supplemented by demographic information. In agreement with Chan (1998), all the questions that did not measure at a team level were adapted to such by changing the pronoun in the item. The scales were tested in a pilot study and preliminary tests of the final questionnaire response.

Sample Selection

Since the Big 4 audit firms conduct more than 90% of audits in Sweden (Willekens et al., 2019), contact was made with all Big 4 audit firms, but with no response by two of them. Consequently, the interview participants were from two Big 4 audit firms and one medium size audit firm. The contacts were at local audit offices, which allowed for an emergent snowball sample of practising audit teams (Marshall, 1996). Each of the small offices worked on audits from a variety of industries, with several participants stating that they did not have the opportunity to specialise in specific industries. The offices were located in three different towns ranging from between 70,000-120,000 inhabitants, although the business activities of the clients ranged from local to national or international. Team members described their workload as ranging from about 120 engagements per

year to several hundred. Those with the most engagements were partners at the audit firm, although assistants and managers also had similar workloads. The majority of the workloads were with small private companies. These inherent limitations to qualitative approach are acknowledged.

To enable the confidentiality of the client, each team was selected by our contacts at the audit office and the participants chose the audit engagement experience. Each team was asked to choose and discuss a team experience based on one of the large engagements at their office in order to increase comparability and to enable team members to discuss their interactions. The size and variation of the participant teams were determined by the amount of useful information that might be generated and so that all levels of audit teams could give information about the different perspectives on audit team roles. The participant constellation was 42% female and 58% male, with a varied amount of experience both as audit team members and working at the audit firms.

A total of 12 interviews were conducted with 19 participants that form 8 teams: 2 were partners, 8 were other certified auditors (managers and directors) and 9 were assistants (see table in article 2). As the last three interviews indicated that we had reached thematic saturation (Denzin & Lincoln, 2011; Glaser & Strauss, 1967; Weller et al., 2018), we did not pursue further teams. This is consistent with other qualitative research (Guest, Bunce, & Johnson, 2006) that has found that meta-themes occur by 6 interviews and saturation occurs within 12 interviews. Researcher discretion is not considered a threat to validity or reliability of qualitative research (Alvesson, 2003; Creswell, 2006; Quattrone & Hopper, 2005).

The interviews were conducted in groups and individually. This was mostly due to restrictions in schedules, but also to help us gain insights into the positive influences that both interview methods can reveal. For example, allowing different voices to speak on an individual and team basis can reveal more about the team experience (Morse, Barrett, Mayan, Olson, & Spiers, 2002). In groups, some participants may speak more and others less due to the social behaviour in the team or other cognitive difficulties. By using both individual and group interviews it is possible to enrich our understanding of audit team experiences, although it is also recognised that respondents may be more reserved about expressing their opinions in a group interview situation.

It was important for as many team members as possible to participate on a specific audit engagement team so that as much information from each team member's perspective could be obtained. According to Sandelowski (1995), a purposeful sample can produce enriched information in qualitative research, which was the aim of this study. The original participants gave further potential participant contacts located at different offices. Unfortunately, not all the members of each team were able to participate due to some leaving the audit industry, or being on sick leave or parental leave. One team contact could neither participate nor organise their team to participate due to time constraints on their schedule. An invitation to take part in the interviews was sent out by email to the

other two Big 4 firms and two other medium sized firms without receiving any response.

The participants who took part in the second stage questionnaire data collection were from one Big 4 audit firm. Access was gained through 3 partners at the firm, 2 of whom also worked with the firm's own internal research group. In the later stages, and during the data collection, access was also given to 2 administration employees who helped with the logistics of email communication and any problems that occurred. As the firm had its own interest in conducting research on the subject of audit teams, this research was received positively and cooperation was promised early on in the research process. However, organising the audit teams and access to data, as well as consulting with the audit firm's legal team on confidentiality issues, delayed the questionnaire data collection in stage 2. Therefore, access to the data played a role in how each article progressed.

The Big 4 audit firm provided 909 relatively large private and public engagements [11] for the year 07/2015-06/2016. Some details were given about each engagement client, such as turnover, number of employees, industry and segment, length of time at the audit firm, location and other key figures. Also, information about the audit teams was provided, such as team size, how many different grades[12], the audit hours of each audit team member, audit fees per team member and their contact details. This enabled the analysis to control for different team and client characteristics.

A pilot test was conducted at the end of each interview, either in the presence of the researchers or via an internet web-service. Information gathered from this helped to develop the questionnaire and prepare for a second pilot test round. The second pilot test was conducted over 5 working days with the use of 5 randomly sampled teams of the 909 engagements via the same internet web-service, with a response rate of 39%. The technical issues that occurred with the web-service were resolved.

The sample selection for the main study of the 909 team engagements consisted of 9,405 observations, but as some were not considered to be part of the audit assurance team[13], the sample was reduced to 6,932 observations. In order to maximise the sample size and make sure that the same individual only had to reply to the questionnaire once, duplicated audit team members were eliminated by selecting the most audit hours that the auditor had worked in a team. This selection criterion was regarded as increasing the likelihood of recollecting the audit team experience. Also, in order to gain more information about audit team interactions, each team had to have at least 3 team members who could participate in the survey. Consequently, the main study sample selection consisted of 217 audit teams with a total of 776 audit team individual

[11] An engagement is the term used in the audit literature to describe the work they do to *engage* with the client, so one client equals one engagement. However, as some engagements can have a big client, many teams might take care of smaller local engagements/client offices or subsidiaries.
[12] Partners, directors, managers, associates and other positions in the hierarchy of the team.
[13] Consultants, administrators, couriers etc.

members that only responded to one team engagement (see Table 2 in the Appendix for more descriptive statistics).

Data Collection

The interview data collection period was from 6th November to 22nd December 2015. Each interview averaged about 1 hour and 30 minutes and ranged from 50 minutes to 1 hour 38 minutes. Interviews were conducted in teams face to face (7), individual and face to face (3) and individuals by telephone (2). All the participants consented to recording each interview and the data being used for audit research purposes.

Two researchers were present during every interview except one, while one interviewer asked the questions the other took notes and reflected on the interview experience. Each interview started with a general discussion about the research and the purpose of the interview, letting each participant know about confidentiality and anonymity. One researcher transcribed the recordings into text and reviewed the transcripts for translation accuracy (the interviews were conducted in Swedish). When a third researcher who did not speak Swedish became involved with the writing of article 1, it was necessary to translate the entire transcript into English before selecting the relevant quotes for article 1's analysis so that the third researcher could take part in it. In order to make sure that the translations were correct, the Swedish speaking authors constantly reviewed what the participants meant in relation to how the Swedish language is used contextually and culturally.

The questionnaire's first pilot test took place from 6th November to 22nd December 2015, during the first stage of data collection of interviews. The second pilot test round took place from 28th November to 2nd December 2016 at one of the Big 4 audit firms. The main study took place from 8th December to 23rd December 2016 at the same Big 4 audit firm.

The questionnaire was distributed through an online platform, which is said to make data easier to collect and transfer, reduce the response time and costs and reduce the bias due to researcher-respondent contact (Jones III, Norman, & Wier, 2010). An email that gave the ID of each engagement was first sent out by two of the audit firm's partners, which made sure that each participant only responded to one ID engagement. Emails were then sent out by the researcher to invite the participants to take part in the survey questionnaire and to inform about the research as well as anonymity and confidentiality. The individual response rate of the main sample study was 43%, the team response rate was 85% and the average time it took to complete the survey was 49 minutes.[14] This indicates several possible outcomes, for example, that when an audit firm instructs respondents to take part they may think about their answers more thoroughly. The actual average time it took to respond to the questionnaire

[14] In comparison, a previous study (Dirsmith & Haskins, 1991) using a similar research design found that questionnaires took an average of 2.1 hours to complete.

was about 20 minutes longer than the pilot test, which also indicates that the participants may have been influenced by where the questionnaire was conducted , whether they were interrupted or simply chose to complete the questionnaire at a later point (see Table 2 in the Appendix for further details).

Data Analysis

The overall approach to analyse the interview data was thematic in nature due to the interview topics and unstructured approach (Creswell, 2006; Rowley, 2012). The recorded interviews were transcribed and uploaded to NVivo, a qualitative data analysis software tool. NVivo was used to code the transcripts by predetermined themes (hierarchy and stress) and emergent themes (trust and intrinsic motivation) that occurred during the interviews or were recognised after reviewing the transcripts. The coding scheme was developed by reading the responses line by line, assessing the codes of the subject matter, comparing the codes in the team responses and comparing the codes in the individual responses. The transcripts were also coded by an external researcher, who was given transcripts without detailed knowledge of the research subject or knowing the interview questions. This allowed us to check our understanding of the interview answers against an unbiased researcher party, which revealed intercoder agreement (Kurasaki, 2000).

NVivo was also used for further analyses, including a *text search* analysis of all the data, an analysis by each team and an analysis by the different auditor roles. The software was also used to perform a covariance analysis of the most common themes to provide a deeper understanding of the data and the relationships between the major themes. According to Anderson-Gough et al. (2005), coding via predetermined questions, theory and the emerging data allows for a more dynamic analysis of the interview data. Instead of just analysing a quantitative count of the most common words, the data was also used to interpret the meaning behind similar and different experiences of the audit teams. Quotes were selected for articles 1 and 2 that were most representative of the similarities and differences between the teams. The similarities and differences were first observed during the interviews and reflections after each interview, then again when the data was transcribed and coded and also confirmed by NVivo's covariance tools. To increase the reliability of the evidence selected for interpretation in the analysis, contradictory evidence was actively sought in order to determine that the conclusions that were drawn were reliably representative of the patterns that emerged from the participants' perspectives. This can help to reduce any possible confirmation bias from the researcher (Onwuegbuzie & Leech, 2007).

Basic team information was collected by questionnaires at the end of each interview, some of which were conducted by paper in the presence of the interviewers, while others responded later via the internet. The different approaches were due to participant preference, time limits at the interview and the distance between interviewer and participant. An Excel sheet was uploaded

to the NVivo program and coded to each individual response, which allowed for a demographic control analysis to support the qualitative interview data.

The questionnaire data was analysed using ordered logistic regression, since the dependent and independent variables tested for articles 3 and 4 used the Likert Scale design. Ordered logistic regression can also account for continuous variables, so this enabled the inclusion of several controlling variables about the client and the teams in this research. The dependent variable in both articles was the AQTB to operationalise an audit quality antecedent that is relevant to the analysis of team dynamics. The independent variables for article 3 included objective, subjective and communication distances that captured a set of psychological distances designed to understand how people perceived their interrelations with others. These measurements were chosen in order to measure the perceptual equality in the teams, or how teams felt that they were treated by others. Observing or directly asking teams whether they had been treated equally or not is a rather sensitive subject, in that it could increase the chance of non-response or reduce the reliability of answers. To overcome this, the use of perceptual distance measurements can help to capture equality in a team. The independent variables for article 4 included deindividuation, social identity, social status and gender equality in order to capture team equality measurements for gender and other perceptual mistreatments by team members. The computer software STATA was used to conduct the analysis, which can upload data sets from Excel and provide Word and Excel table formats to report the findings.

Dependent Variable: Audit Quality Threatening Behaviour

The interviews were designed to ask directly about the AQTB used in prior literature (Coram et al., 2008; Otley & Pierce, 1996; Sweeney & Pierce, 2015) and other behaviour to determine whether the participants thought that any specific team behaviour influenced audit outcomes. Audit quality was also probed directly in order to identify any different perspectives about audit quality than previous audit research definitions (see the interview guide in the Appendix). In comparison, the questionnaire used the Likert scale design to asked how frequently team members performed each AQTB on a scale of 1 (never) to 5 (often), which can be seen in question 32 in the questionnaire in the Appendix.

The sensitivity of questions like AQTB (and stress) could lead to social desirability bias, which has been known to lead to dishonest perceptions due to the possible negative consequences of the subject (Chung & Monroe, 2003). To address this issue, team members were asked about their experience of the team as a whole team in the interviews and the questionnaire. According to Sherwood (1981), projecting something onto others can be a form of psychological defence against sensitive subjects, which enables the respondent to feel more at ease with the subject and therefore more likely to respond honestly. Nevertheless, it is difficult to fully determine what might influence a participant's perceptions of the team's behaviour and is acknowledged as a limitation.

Ethical Reflections

At the start of each interview we informed the participants about the research and what the data would be used for, asked for their acceptance and ensured confidentiality and anonymity. If they volunteered sensitive information during the interviews we asked for consent to use it. The clients of these interview engagements were kept confidential. We made contact with auditors we had met before who gave us further contacts to participate in our surveys. Although we already had a professional relationship with some of the participants and our sample was snowballed, we did not know these auditors on an informal friendship basis and could therefore keep an ethical distance from all our participants.

Reflections were made on which ethical issues might influence the research from every input: the researcher, the participants, where the data was collected, how it was collected and when it was collected. The sample, interpretation/reflection and analysis are from the authors' perspectives, with theory used as support. Hence, the research has been honest and open about all the stages of the investigation in order to allow readers to be critically aware of the information that is given.

Most of the interview participants seemed relaxed enough to give what felt like an honest opinion about their experience. However, a few of the more senior participants gave answers that seemed to create a positive impression of their audit firm. These statements were carefully considered as possible reality threatening results (Alvesson, 2003). Assumptions about the research that were made by the participants helped to enrich our understanding of their audit team experience and guided our interview instrument development during the data collection period.

Anonymity was also provided for the questionnaire participants and the audit firm. Client engagements were kept confidential, but some data was provided to use as control variables that do not reveal the client. Access to this proprietary data has been restricted to only 3 participating researchers that were presented to and acknowledged by the audit firm. Names and contact details of team members were coded and then deleted in order to keep anonymity. Since the audit firm is anonymous this research cannot provide all details of the firm. The complete questionnaire is provided in the appendix of this dissertation for full transparency.

Review and Conceptual Analysis

The literature review and conceptual analysis discuss the theories that were used to design the four individual studies and those that emerged in them. The psychology and organisational literature is reviewed to inform the reader about the prior audit team inferences made in relation to audit quality and other team research relevant to this study. A conceptual analysis is presented with each

research question to argue for the findings in each article through the perspective of the relevant SDGs. The review starts with audit quality and the behaviour (AQTB) that has been identified in audit research in order to inform the reader about the connection that audit research has with the SDG context. This is followed by the audit team determinants.

Audit Quality in Audit Teams

SDG 17: How well do audit teams achieve the SDGs? Audit Quality and the Balanced Scorecard Framework

Traditionally, audit quality has been described (DeAngelo, 1981) as the competence of auditors and the independence to ensure that financial statements are free from any material misstatements. However, as this description of audit quality has been criticised as too simplistic (DeFond & Zhang, 2014; Francis, 2011; Knechel et al., 2013), researchers have studied the many factors that might help to better understand audit quality. Knechel et al.'s (2013) framework of audit inputs, processes, contexts and outcomes suggests that: 1) The audit inputs and the audit process are antecedents of audit quality conditional on the individual auditor's ability and cognitive bias, 2) context is an antecedent of audit quality based on individual auditor incentives and pressures that directly affects the inputs and process and 3) audit outcomes indirectly measure audit quality by using the consequences of an audit. Knechel et al. (2013) state that the audit inputs and processes required to conduct an audit can vary, which means that there are different ways to organise such inputs and processes. However, the framework can investigate audit quality with a flexible approach that can include both objective and subjective evidence about audit teams in several audit engagement contexts.

IAASB (2014) has developed a framework that is designed to help improve audit quality and is based on the input, process, context and output balanced scorecard approach. IAASB is an organisation that produces auditing and assurance guidelines and standards for accounting professionals to use to improve audit quality, so that international and national auditing and assurance standards converge and are of a high enough quality for public interests globally. The aim of the audit quality framework is to: "1) raise awareness of the key elements of audit quality, 2) encourage key stakeholders to explore ways to improve audit quality and 3) facilitate greater dialogue between key stakeholders on the topic" (IAASB, 2014). These frameworks have influenced how this research suggests that audit team sustainability can be perceived in relation to the sustainability of audit quality (see Figure 1).

The model in figure 1 is a proposal framework that can be used to better understand how well audit teams achieve the SDGs. As a sub-purpose, this research has developed a cyclical audit team framework by investigating new audit team inputs, processes and contexts in each individual article that are proposed as antecedents to sustainable audit teams. The model suggests that a sustainable audit team outcome could be measured by how well the SDGs

addressed in each study have been achieved by audit teams. Future research could better ascertain if empirical studies can confirm this proposed framework.

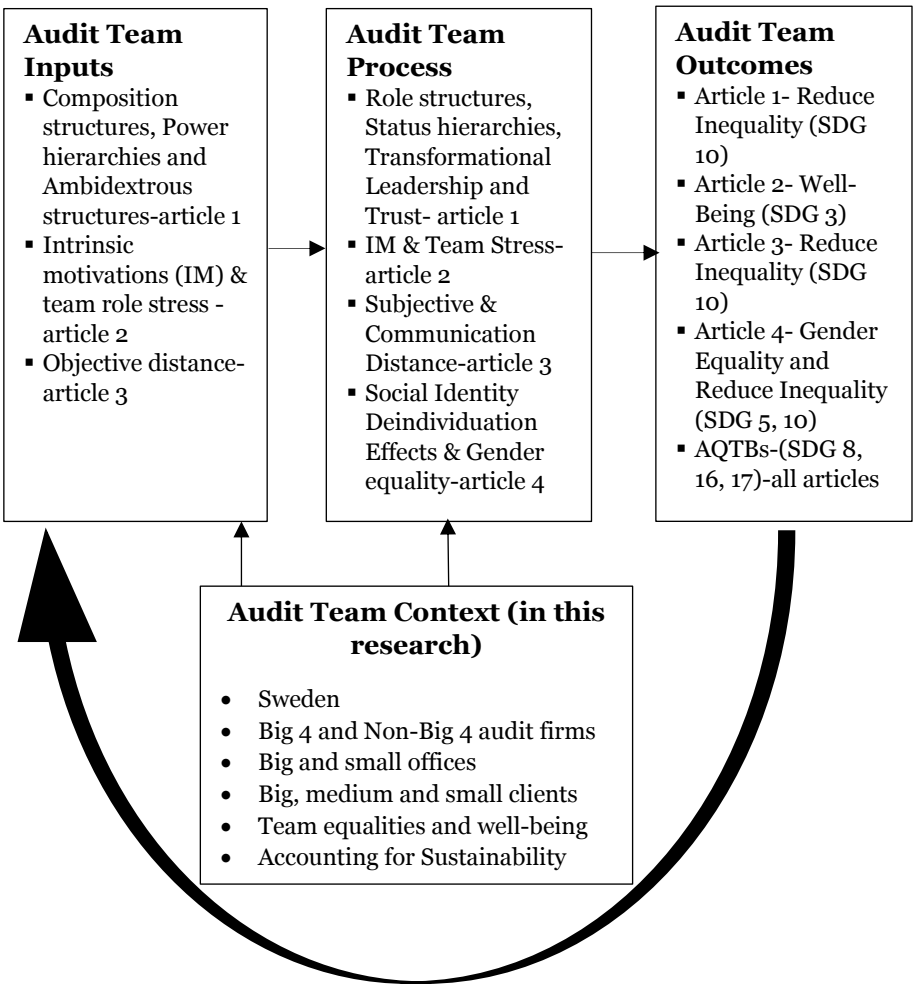

Figure 1: Audit Team model as a cyclical process

SDG 16: What are the audit team determinates of AQTBs? Audit Quality Threatening Behaviour

Audit research has also studied behaviour that is displayed in the audit context and is known as Audit Quality Threatening Behaviour (AQTB). The occurrence of AQTB has been well documented (Buchman & Tracy, 1982; Kelley & Margheim, 1990; Margheim & Pany, 1986; Raghunathan, 1991). AQTB includes the biasing of sample selection, under reporting of time, premature sign-off, unauthorised

reduction of sample size, greater than appropriate reliance on client work, acceptance of weak client explanations, failure to properly document work and failure to research an accounting principle. These kinds of behaviour can be considered as deliberate or inadvertent (Sweeney & Pierce, 2004, 2015).

Time budget pressure and the dysfunctional behaviour of under reporting the time (URT) have been studied in great detail (Ponemon, 1992; Svanberg & Öhman, 2016; Sweeney & Pierce, 2004; Willett & Page, 1996). URT can threaten the quality of the audit due to its influence on 1) next years' time budget, 2) client fee negotiations, 3) assessment of effectiveness, 4) resource allocation decisions and 5) extra client billings. Premature sign off (PSO) has been found to be least likely to occur due to its high moral intensity perception (Coram et al., 2008), although the frequency of occurrence of both PSO and URT have been found to vary across nations (Soobaroyen & Chengabroyan, 2006). The other kinds of behaviour have mostly been investigated together, which suggests that they have the same influence on audit quality. However, in this research the results (see articles 3 and 4 especially, as well as articles 1 and 2) showed that more can be learned about AQTB if it is studied as individual behaviour, thus supporting the literature of Sweeney and Pierce (2004, 2015) and Coram et al. (Coram et al., 2008). Both studies in articles 3 and 4 found that the determinants of AQTB had significant results with specific behaviour, including behaviour other than URT and PSO, which indicated that we can learn more about these kinds of behaviour if we investigate them in different situations (such as the team's psychological distance and team equality).

If audit teams do not properly execute the audit steps, AQTB will occur (Alderman & Deitrick, 1982; Kelley & Margheim, 1990). AQTB can lead to an incorrect audit opinion, and audit effectiveness can be weakened. Behaviour such as making a biased sample selection of the evidence to conduct the audit, or reducing the sample size, has been linked to sampling errors that led to big audit failures in the US at the beginning of the century (Cullinan, 2004). Some behaviour is perceived to be most threatening to the audit opinion (Coram et al., 2008; Peytcheva & Gillett, 2012) and therefore threatens the accountability of the audit team. The frequency of AQTB has varied between studies in previous research (Otley & Pierce, 1996; Soobaroyen & Chengabroyan, 2006; Sweeney, Arnold, & Pierce, 2010), which indicates that we can better understand the determinates of AQTB if individual behaviour is studied and measured under different conditions.

Several studies have found that auditors perceive some behaviour as difficult to detect and is therefore rarely punished (Malone & Roberts, 1996; Sweeney & Pierce, 2015), which suggests that AQTB will perpetuate and therefore continue to threaten the accountability of the audit team. Sweeney and Pierce (2004) found that AQTB occurs because: 1) audit firms need to reduce costs due to aggressive audit fee competition, 2) teaching juniors takes time out of the already pressurised time budget, 3) there are several client pressures, 4) the influence of cost reduction technologies, 5) pressures from international auditors, 6) complexity of the clients' business and 7) staff evaluations. They also found

that overstaffing the audit team leads to competitive behaviour and understaffing the audit team leads to a lack of care for their behaviour.

Furthermore, Sweeney and Pierce (2011) found that audit team clients can influence whether or not the audit team displays AQTB. Evidence has revealed that AQTB has a negative influence on the revenues of audit firms due to client relations (Sweeney & Pierce, 2015), that clients can have a negative influence on the audit firm's ability to complete the work on time (Herda & Martin, 2016; Svanberg & Öhman, 2013; Willett & Page, 1996) and for the firm to be able to evaluate employee performance correctly (Bedard et al., 2008). Furthermore, AQTB could have adverse consequences for audit firms in terms of damaged reputation, increased litigation risk and for stakeholders who use audit opinions. Adams and McNicholas (2007) suggest that stakeholder engagement can bring about a change in behaviour and can challenge the roles that each stakeholder plays in accounting for sustainability. Therefore, this research contends that how well the audit team behaves in relation to its stakeholders can influence how well its stakeholders behave and are accountable for sustainability. Knowledge about AQTB can therefore contribute to audit research on audit team outcomes and audit team quality (see Figure 1) and audit teams' accountability in relation to unethical behaviour.

SDG 17: How well do audit teams achieve the SDGs? Sustainability Accounting and Accounting for Sustainability

Sustainability accounting is the accounting of environmental, social and economic activities that most organisations include in their annual reports (Adams & Larrinaga-González, 2007; Burritt & Schaltegger, 2010). In the past many organisations reported information other than their economic performances separately, but it is now obligatory for most organisations to report on all their sustainability activities in their annual reports. The Global Reporting Initiative (GRI) is an organisation that has facilitated this obligatory reporting of all three sustainability pillars (Gray, 2010) to enable all types of organisations to enjoy the benefits of sustainability reporting and reduce the costs of this change in accounting. Since the UN released its report (2017) on how organisations worldwide can achieve the 17 Sustainable Development Goals (SDGs), GRI has developed an SDG Compass (GRI, 2019) that helps organisations to adjust their reporting through the use of the GRI guidelines in relation to the UN's SDGs.

Audit firms have also taken a significant step in this direction in their accounting (Bebbington & Unerman, 2018; Gray, 2010) and offer guidance to their clients on how to incorporate sustainability accounting in their annual reports in relation to the UN's 17 SDGs and the GRI guidelines. Many organisations showed signs of resistance to sustainability reporting at first (Burritt & Schaltegger, 2010; Lamberton, 2005; Schaltegger & Burritt, 2010), due to the cost of implementing sustainability, non-belief in the practicalities of integrating sustainability reporting and dismissal of the term as a trend that would soon disappear. Evidence has shown that this has led to what has become

known as greenwash accounting, i.e. sustainability accounting that does not fully address sustainability matters (Adams & McNicholas, 2007; Haller et al., 2016). Therefore, trust in sustainability reporting has weakened and although many organisations now understand the many benefits that sustainability reporting can bring (Bebbington & Unerman, 2018; Lamberton, 2005), there is still a lot of work to be done to increase the trust in sustainability accounting and assurance given to sustainability information in reports.

Those who are accountable for sustainability play a significant role in developing knowledge and trust in sustainability reporting (Gray, 2010) and the kinds of things that audit teams should report on. In order for audit teams to be accountable for the SDGs in their clients' activities, they first of all need to account for their own SDGs. The many scandals that have involved audit firms indicate that audit firms can be a threat to the sustainability of the economy, society and the environment. As evidence has found that unethical audit quality threatening behaviour is linked to audit failures and the scandals that have threatened the audit industry (Cullinan, 2004), audit teams play an important role in how well they can achieve the SDGs as a team and provide a benchmark for those they attempt to guide. Adams and McNicholas (2007) find that attitudes, power relations and communication flows can influence how well sustainability accounting is implemented and, therefore, how well organisations can account for their own sustainability activities. This research contends that knowledge about how well audit teams achieve the SDGs, borrowing from theories of hierarchy power and status relations, role structure and team role stress, team distances and equality, can contribute to our understanding about how audit teams account for sustainability in their work to improve audit team quality.

Audit Teams

SDG 16: How are audit teams structured?

IAASB specifically states that engagement teams should be "properly structured" (IAASB, 2014) but does not define any particular type of audit team structure. Audit teams are known to have a hierarchical structure (Bamber, 1983; Rich et al., 1997), although the literature on team structures in psychology and organisational studies (Buttigieg, West, & Dawson, 2011; Hinds & McGrath, 2006; Wageman, Hackman, & Lehman, 2005; Woolley, Gerbasi, Chabris, Kosslyn, & Hackman, 2008) describes team structure as the inputs of composition structure and the process of role structures.

Composition structure can be described as the surface diversity of the team and includes team size, team skills, job positions and other demographic variables (Harrison, Price, & Bell, 1998; Wageman et al., 2005). The many studies conducted on individual auditor's characteristics have contributed some understanding about the influence of these composition factors. In short, evidence about individual auditor influence on audit quality includes engagement tenure (Carey & Simnett, 2006), gender (Hardies, Breesch, & Branson, 2014;

Ittonen, Vähämaa, & Vähämaa, 2013; Sweeney et al., 2010), educational background, experience in a big audit firm, position in the audit firm and political affiliation (Gul, Wu, & Yang, 2013). Furthermore, individual auditors have been found to have a variety of cognitive limitations, heuristics and bias that can influence judgements, such as confirmatory bias, anchoring and source credibility (J. F. Smith & Kida, 1991), recency effects (Kennedy, 1993), relative recall (Libby & Trotman, 1993), biased memory (Ricchiute, 1999) and the dilution effect (Hackenbrack, 1992). Also, research has documented that auditors need to have the right competencies, in terms of training, skills, expertise (Hammersley, 2006; Kennedy & Peecher, 1997; Libby & Luft, 1993; Owhoso, Messier Jr, & Lynch Jr, 2002; Ramsay, 1994; Tan & Libby, 1997) and professional scepticism (Hurtt, 2010; Knechel et al., 2013; M. W. Nelson, 2009) in order to make high quality judgements.

Individual auditor characteristics can also be linked to the knowledge gained about audit inputs, even though audit team inputs differ in that they relate to what is captured in the team as a whole rather than the individual. Audit team characteristics that have been found to influence audit quality include team size (Cameran, Ditillo, & Pettinicchio, 2017; Van Linden, Knechel, & Willekens, 2017), collective team experience, team education and the proportion of females and males in the team (Cameran, Ditillo, et al., 2017). Factors such as competence, skills, knowledge, training and independence, accountability and responsibility are of great importance for the quality of the audit (IAASB, 2014), but also for the sustainability of audit quality. Consistent with Gollan (2000), who suggests that team capabilities development is important in order to attain a sustainable workforce and positive influence on work outcomes, audit team composition structure can help to explain the audit team inputs that influence a team's capability to achieve a sustainable audit quality. The study in article 1 found that competence, availability and development opportunities are three audit team inputs that can be influenced by power hierarchies. The results showed that teams with equal power hierarchies perceive that the division of tasks relates to their competence, that engagement placement should be equally distributed between the available auditors and that opportunities for development are equal and challenging. This result indicates that equality in team power hierarchy can help to provide better audit team capabilities, especially when input selection is made through priorities of competence, availability and development. This research contends that audit team compositions are structured due to a cost-benefit analysis, which does not prioritise the sustainability of the team engagement and ultimately threatens the team's ability to account for sustainability.

Process factors of audit team structures can be described by the role structures of teams. Role structures are the deep diversity of the team, including team member interrelations, status relations, trust among team members and shared goals (Forsyth, 2010; Harrison et al., 1998). Knowledge about the audit team process includes audit tasks, discussion and digitalisation. Audit tasks have changed with the use of a business risk approach (Curtis & Turley, 2007; Eilifsen, Knechel, & Wallage, 2001), which has been influenced by regulation changes in the audit industry and has led to an increasing digitalisation of audit tasks. This change has initiated a change in how the audit team carries out the audit (at the

office or at the client), what the audit team audits (sample selection), when the team can audit (real-time), and who audits which audit task. This continuous audit environment (Woodroof & Searcy, 2001) has been aided by the digitalisation of the audit process (Deloitte AB, 2018; EY, 2018; KPMG, 2018; PWC, 2018), which has in turn influenced a change in the roles of audit teams.

Some research on audit team processes has been conducted, but has not studied actual audit teams (Cameran, Ditillo, et al., 2017). For example, brainstorming for fraud risk has become a common element in the audit team process while the team assesses the risk of the engagement, and research has found that face-to-face structured brainstorming sessions have outperformed unstructured sessions (Brazel, Carpenter, & Jenkins, 2010). However, process losses have also been encountered, such as social loafing, and it is suggested that more research is needed to better understand how process losses due to brainstorming sessions can be mitigated (Trotman, Bauer, & Humphreys, 2015). On the one hand, Bamber et al. (1996) have found that decision aids, such as technological support, can help audit teams to make better decisions, which may mitigate any team cognitive limitations, heuristics[15] and bias. On the other hand, Brazel et al. (2004) found that face-to-face reviews can improve the quality of judgements compared to the use of electronic aids.

The group dynamics literature can help to explain why the audit process experiences loss when every team members' opinions cannot be expressed (Bedard, Biggs, & Maroney, 1998). The results in article 1 revealed that audit team roles can be influenced by a horizontal power hierarchy that can dilute the negative effect of inequality found in vertical power hierarchies. Also, team trust and leader accessibility were perceived to influence information uncertainty, judgements and decision making. This is consistent with Hyndman and McConville (2018), who found that when information is accessible to all stakeholders, there is more trust in and accountability for the decisions that are made and the actions taken. Consistent with Adams and McNicholas (2007), this research argues that challenging group dynamics and team roles can lead to knowledge about how audit teams can account for sustainability in the future.

SDG 16: How do audit teams influence audit judgements and decisions? Hierarchical structures

Audit teams are known to have hierarchical structures (Bamber, 1983). Evidence documents that the hierarchal process of a member who prepares the audit task and a member who reviews that audit task can influence audit quality (Rich et al., 1997). A set of audit literature (Rich et al., 1997; Trotman et al., 2015) has found many interacting results between this dyad relationship, which includes evidence that audit quality is related to the effort a preparer puts into the work and that preparers stylise their presentation of the judgement in order to persuade reviewers. These results relate to both audit inputs and audit process and are

[15] A heuristic is a mental process used to make a judgement or decision (Kunda, 1990).

based on the individual characteristics of the auditor and what or who influences the situation. For example, there is evidence that reveals a positive relation to audit quality with the diversification effect (more diverse teams), discussion that leads to cognitive stimulation (brainstorming sessions) and a hierarchical effect (influence of team structure). Frank and Hoffman (2015) found that the hierarchy effect of reviewer on preparer may not always mitigate bias in the preparer's judgement. Therefore, an audit team's hierarchical structure may have a negative influence on the interactions between team members, audit team behaviour and their judgement and decision making processes.

Building on this knowledge, this study borrows from psychological literature which suggests that hierarchies can be described as having two dimensions: power and status (Blader & Chen, 2012; Tost, Gino, & Larrick, 2013). While power can be independent of team member perceptions, status can be dependent on other team member perceptions. A team member with power has control over the outcome of the team's work, although the team member with status has "prestige, respect and esteem" (Blader & Chen, 2012) among other team members. Therefore, it has emerged that the theory of hierarchical structures that explains the power in audit teams to control resources and the status interactions within audit teams can contribute new knowledge about audit teams and their influence on judgements and decision making. Power can derive from the audit teams' composition structure and therefore contribute knowledge about audit team inputs (see Figure 1), whereas status can derive from the audit teams' role structure and can contribute to knowledge about audit team process (see Figure 1).

SDG 8: Why do audit team structures influence audit outcomes? Power

There is good understanding in the organisational and psychology literature that the power of having control of team resources influences social interaction and behaviour (Magee & Galinsky, 2008) and that we can better understand how well teams perform by understanding the power relations in teams (Mannix & Sauer, 2006). In the psychology literature, the functionalist theory of power (Tarakci, Greer, & Groenen, 2015; Tost et al., 2013) explains that if the team leader has the most power, then he or she will be able to positively influence the team members through clear, coordinated instructions. However, the conflict theory of power (Tarakci et al., 2015) suggests that if power is shared equally, and discussion and collaboration are encouraged, the team will perform well.

In the context of audit teams, the power holder of the resources and the controller of team structure appears higher up in the hierarchy and can be a resource manager outside the team. This power holder makes decisions and controls team structure and therefore has most influence over any possible change towards audit team sustainability. However, audit team processes also require team members to listen and understand others' perspectives in order to make judgements on audit evidence, which emphasises the importance of a power holder in an audit team hierarchy who allows for discussion and

deliberation. Furthermore, the psychology literature has found that the power distribution in teams influences how team equality functions (Greer & van Kleef, 2010; Schaubroeck, Lam, & Cha, 2007; Tarakci et al., 2015). If power is equally distributed, team performance increases. This research contends that it is important to understand the composition structure of power hierarchies in an audit team in order to better understand the affect that power distribution has on team equality and, thus, the ability of audit teams to account for sustainability. Article 1 found that teams are structured due to competence, availability and development opportunities, which were perceived to be influenced by power distributions, and that the development of team capabilities should improve team accountability in terms of team equality. Audit team power hierarchies are seen as part of the audit team input as an antecedent to audit team quality (see Figure 1).

SDG 10: How do audit team structures function? Status

The organisational and psychology literature has shown that status in a hierarchical team is known to influence team interactions and team outcomes (Blader & Chen, 2012; Magee & Galinsky, 2008; Mannix & Sauer, 2006). Blader and Chen (2012) found that a high ranked status member of a team is usually perceived as just and fair, but a high ranked power member[16] is usually perceived as unjust and unfair. Also, when a team member has a high status they will also hold low power in a team, and vice versa. Thus, interactions between team members can be positively influenced by a team member with high status, but negatively influenced by a team member with high power.

One common goal of audit trainees is to attain certified public accountant (CPA) status. Once certified, most auditors work towards attaining the status of partner at an audit firm. However, many auditor trainees leave the profession before taking the exam, and many female certified auditors leave the profession before attaining partnership status (Lennox & Wu, 2016). Organisation literature has found that status hierarchies influence team equality and lead to negative team behaviour (Magee & Galinsky, 2008). Furthermore Schaubroeck et al. (2007) found that conflicts in team status hierarchies can lead to perceptions of inequality in teams. Article 1 revealed that status in an audit team's roles structure can influence leadership, discussion and how the team defines itself. This was perceived to have both positive and negative connotations for how well the team functioned. If the aspirations of a team are not met, for example by not gaining that high status and challenging tasks, the sustainability of the team can be threatened (Gollan, 2000). This research argues that knowledge about status hierarchies in an audit team context can provide new information about the audit team role structure and its influence on audit team equality and the sustainability of the audit team. Audit team status hierarchies are seen as part of the audit team process as an antecedent to audit team quality (see Figure 1).

[16] A status member has been prescribed their status by the team, whereas a power member controls power over the team, such as when making a decision.

SDG 10: How do audit team structures function? Ambidextrous Structures

Organisation literature has developed a theory that describes different team structures as mechanistic, organic/flexible or ambidextrous (Adler, Goldoftas, & Levine, 1999; Duncan, 1976). A mechanistic structure is said to be most effective when it has a rigid horizontal structure that can control the team process of routine tasks. Organic/flexible teams have time to discuss non-routine tasks, make collective judgements and decisions about how to proceed in a flexible manner throughout the team process and use their specialist qualities to improve their work. A team that can switch between mechanistic and organic structures as and when necessary is called team structure ambidexterity and is described as the optimal structure for all teams.

An audit team with a mechanistic composition/role structure can perform routine tasks effectively, but an ambidextrous audit team structure should be able to adjust to a flexible organic composition/role structure to perform non-routine tasks. This could be helpful for audit teams. For example, article 1 revealed that teams require team member changes to help with workloads, or when the client's business activities change and audit teams need to adapt to additional competencies. Furthermore, teams that can adapt to changes will be more successful in achieving goals (Daily & Huang, 2001), such as the inclusion and understanding of sustainability reporting in the client's annual reports and evaluations of the audit firm workplace from a sustainability perspective. March (1991) found that organisations that seek to explore new information will do better than organisations that exploit existing information. This indicates that audit teams with ambidextrous structures will be able to explore new evidence to reach a new audit opinion and thereby increase audit quality.

As the introduction of new AI technologies is imminent (Issa, Sun, & Vasarhelyi, 2016) adaptation will be a key element when planning future audit team structures. According to Gibson and Birkinshaw (2004), ambidextrous teams are in paradox, but can better adapt to future changes. Transformational leader (Jansen, George, Van den Bosch, & Volberda, 2008) is a term that is used in conjunction with ambidextrous structures and describes a leader who can lead more effectively when a team works in an ambidextrous manner. The term transformational leader has been adopted in Big 4 audit firms to acknowledge how they will address new adaptations to a digital audit (KPMG, 2018; PWC, 2018). However, audit firms may not have the available resources to enable an audit team to be structured in an ambidextrous manner, since finding a good balance of those who can cover routine tasks and those who can take on more challenging tasks can be both difficult and expensive. Overall, ambidextrous audit teams are said to be more sustainable than others (Bucic, Robinson, & Ramburuth, 2010; Gibson & Birkinshaw, 2004; Rosing, Frese, & Bausch, 2011; Zacher & Rosing, 2015), which suggests improved audit team processes and therefore sustainable audit quality. Ambidextrous structures are seen as an audit team input and process factor as an antecedent to audit quality (see Figure 1).

SDG 8: Why do audit team structures influence audit outcomes? Trust

In the audit literature, Pentland (1993) discusses auditing as interaction rituals between audit team members who develop comfort and trust and suggests that auditors are emotional beings. This humanises auditors, instead of portraying them as mechanical beings. Power (1996) developed this discussion to suggest that levels of trust between members of the audit team can change over time, internally and between the team and those external to the team. Therefore, both authors discuss trust as a social construct. Evidence has also indicated that trust between the auditor in charge and the manager of the client firm (Kerler & Killough, 2009; King, 2002) plays a significant role in the quality of the audit. Also, trust between the audit profession and audit report users (Holm & Zaman, 2012) has been of concern, and building trust in the audit profession is of great interest to all stakeholders (IAASB, 2014). In order to create this trust, audit teams are encouraged to develop transparent audit processes (IAASB, 2014; PCAOB, 2013).

In the management accounting literature, Tomkins (2001) found that there is an interaction between trust, information uncertainty and the social status found in teams. This research also relates to audit teams. Article 1 found that audit teams need to work together, network with others and ultimately reduce information uncertainty, while at the same time trusting the work of others. The same article also found that trust between team members is important for how well audit teams function when team members change and for how judgements and decisions are made. This is consistent with Busco et al. (2006), who found evidence to suggest that during a change in processes, when uncertainty may arise, trust between the roles of those involved with the change process is important for a successful process change experience.

Sociology, psychology and organisation literature has reflected on the definition of trust and whether it is possible (Gambetta, 2000; Luhmann, 2018; Mayer, Davis, & Schoorman, 1995). Trust in communication (Giffin, 1967), leadership (Atwater, 1988) and negotiation (Bazerman, 1994) are three of the many insights that have indicated that team interactions are likely to be influenced by trust. Luhmann (2018) discusses the relation between trust and power relations and suggests that there are many complex interactions between these two phenomena that influence team outcomes. Additionally, Glaeser et al. (2000) documented evidence of a relation between trust and social capital status that also influences team outcomes. Furthermore, it is reported in the psychology literature (Butler & Cantrell, 1984) that trust can be influenced by the accessibility of co-workers, which in turn influences behaviour and decision making. Therefore, in the context of audit teams, trust has the potential to influence teams in terms of how well they are able to communicate and negotiate and whether or not the team has an appropriate power distribution and social status relations.

Moreover, Owen and Videras (2008) suggest that trust between all stakeholders plays a vital role in the successful implementation of sustainability programmes. Trust in sustainability reporting has been low, since many organisations have been criticised for their greenwashing attempts (Burritt &

Schaltegger, 2010; Lamberton, 2005; Schaltegger & Burritt, 2010). Although beyond the scope of this research, it is interesting to consider that the SDGs require the present actors to trust future generations to live in a manner that does not harm the quality of life for generations to come. If the present actors do not trust future generations then they are likely to be hesitant to work towards the achievement of sustainable development goals (Scott, 1999). Altogether, this research argues that in order to account for the sustainability of the audit team, the team needs to build trust between team members that can in turn build trust in the audit quality, including building trust in their guidance in sustainability accounting and efforts towards a sustainable future for all stakeholders. As an audit team process factor trust is an antecedent to audit quality (see Figure 1).

SDG 3: Which and how do audit team inputs trigger audit team stress? Team Stress

The well-being of auditors has been recognised in research on individual auditor stress and job satisfaction, job performance and turnover intentions (Almer & Kaplan, 2002; Choo, 1986; Fisher, 2001; Fogarty et al., 2000; Jones III et al., 2010). Evidence has shown that burnout has also been found to be a mediator between role stress and job outcome behaviour and that a healthy lifestyle can mitigate the influence of auditor stress on behaviour (Almer & Kaplan, 2002; Fogarty et al., 2000; Guthrie & Jones III, 2012; Jones III et al., 2010; K. J. Smith et al., 2018). Auditor stress has been documented in research over several decades and indicates a negative influence on the sustainability of audit teams and their work. The literature on team stress has been addressed in this study to help develop our understanding of how stress affects the well-being of the whole audit team and audit team outcomes.

Team literature has found that team stress can differ from individual stress, suggesting that team stress can have multiple dimensions due to the shared experience of stress that originates from a mutual team experience (Dietz, Sierra, Smith-Jentsch, & Salas, 2012; Savelsbergh, Gevers, van der Heijden, & Poell, 2012), while individual stress can be personal. It has also been found that task interdependencies between team members can cause a different type of stress in teams than in individuals. According to Pearsall, Ellis & Stein (2009), the coping strategies for team stress can differ from those of individuals. Furthermore, challenge stressors that have a positive influence and hindrance stressors that have a negative influence[17] have been documented as affecting everyone in the team in the same way (L. T. S. Lee, 2011; Sacramento, Fay, & West, 2013), rather than being a separate experience for each individual (Lepine, Podsakoff, & Lepine, 2005; Webster, Beehr, & Love, 2011).

Dietz et al. (2012) describe the difference between team stress and individual stress as having four dimensions. Firstly, teams can have different

[17] A stress framework based on transactional theory (Cavanaugh, Boswell, Roehling, & Boudreau, 2000).

levels of stress, such as that which originates at an individual level or team level. Secondly, teams can experience physical, cognitive or behavioural stress, all of which can disrupt a team's well-being and process. For example, an audit team may experience burnout stress as a physically debilitating experience, cognitive stress due to a stressful decision making process, or behavioural stress due to client, firm or team pressures to behave in a certain manner. Thirdly, team stress can be experienced when the team is actively involved with team tasks and when it is not working together. Fourthly, team stress can differ over time, which may be of concern for audit teams in that they often work on an audit engagement over several years and can experience changes in knowledge about the client and their client's market conditions.

All in all, very little has been written about team stress in the team literature, although some work has identified how team role stress and different dimensions of team stress differ from individual stress. Daily and Huang (2001) suggest that the improvement of workplace health can enhance a sustainable work environment. Article 2 found that audit teams perceive team stress to be influenced by team inputs of planning, competence and choice of engagements, team processes of team changes, coordination and leadership, team communication, cooperation and support and team outputs of cognitive, physical and affective forms of team stress. This research contends that audit team stress is an important element of audit team sustainability and suggests that much can be learnt about the triggers and mitigations of audit team stress. Audit team stress is an audit team input, process and output factor to audit team quality (see Figure 1).

SDG 3: Which and how do audit team processes trigger audit team stress? Intrinsic Motivations

In the psychology literature, self-determination theory (Deci & Ryan, 2008) discusses the importance of better understanding intrinsic and extrinsic motivations. Specifically, it argues for the concepts of competence, autonomy and relatedness with the two dimensions of autonomy or being controlled, otherwise known as intrinsic or extrinsic motivation. Mastery, autonomy and purpose are types of intrinsic motivators that have been associated with the well-being of workers.

Intrinsic motivation differs from most prior audit literature findings about motivation and incentives. This is because prior literature has looked at motivations that are closely aligned with incentives, such as client pressures (Hackenbrack & Nelson, 1996; Kadous, Kennedy, & Peecher, 2003), regulatory and other external pressures (M. W. Nelson, 2009) and self-serving incentives (Kunda, 1990). However, some audit literature (Peytcheva, Wright, & Majoor, 2014) has found that intrinsic (epistemic) motivation can be increased by the use of principle-based standards, since auditors' demands for audit evidence increase due to an increased process accountability. Also, Kadous and Zhou (2015) found that prompting intrinsic motivation can cause improved professional scepticism and consequential financial reports. Thus, if audit teams have a higher level of

intrinsic motivation, audit quality is expected to improve. Article 2 found that intrinsic motivation can influence team stress inputs, process and outputs through competence and mastery, choice and autonomy, team support and purpose as well as the affective form of team stress output.

Daily and Huang (2001) suggest that employee autonomy and training for continuous improvements in sustainability accounting and accounting for sustainability are paramount if teams are to adjust to new developments in the workplace. This research argues that intrinsic motivation to master knowledge and skills and have autonomy in the work could facilitate an audit team's understanding and training in sustainability accounting and in accounting for their own sustainability. Intrinsic motivation is considered as an audit team input, process and output factor that can develop in a continuous cycle and therefore continuously influence audit team quality (see Figure 1).

SDG 16: Is audit team distance associated with AQTB? Team Distances

Different types of distance can be experienced in teams as well as in the audit industry. Evidence (Broye & Weill, 2008) has documented that the regulatory distance between audit firms can affect audit quality in terms of the distance between countries. Regulatory distance is defined as the different legal and regulation authorities that require different levels of disclosure and different levels of legal protection for creditors. Distances within a country (Gomez-Guillamon & Sanchez-Val, 2012) have also been found to affect audit quality due to the extent to which a region's institutions are decentralised and developed. Moreover, the audit quality of a decentralised and well developed region has a spillover effect on local regions, thus suggesting that the greater the distance from a decentralised and well developed region, the lower the audit quality will be. Hence, the results suggest that geographical regulatory distance between audit team members who are situated in different countries or regions may influence the quality of the audit.

According to Hope, Kang, Thomas & Yoo (2008), the differences in national culture secrecy between countries can also affect institutional developments, which in turn can influence audit quality through the choice of external audit firm used by the client. More secret cultures have less developed institutions and choose smaller audit firms, which in turn suggests lower audit quality. However, the internationalisation of the client mitigates the effect of secrecy cultures through a dilution effect of different cultures. Therefore, audit quality can be positively affected by distances between the client's operations and the main audit firm office location. This research suggests that as evidence has shown that institutional development influences audit quality, the audit industry and accounting practices worldwide are important elements that can influence the UN's SDG 16.

Numan and Willekens (2012) found evidence to suggest that there is a relation between the industry distance[18] between auditors and their clients and the size of the fee premium, as well as the distance between auditor competition and the size of the fee premium. Therefore, a decrease in auditor-client and auditor-auditor distance has been found to increase the cost of an audit for the client. As audit fees and fee premiums have been associated with higher effort (DeFond & Zhang, 2014), this increase in fee premium represents an increase in audit quality. The audit office location has also been found to have a relation to reputation spillover effects of negative news (Huang & Li, 2009). However, the distance between audit firm offices revealed no spillover effect of auditor behaviour. This evidence is closely related to information about how the audit functions due to geographical proximity, otherwise known as objective distance (Hinds & McGrath, 2006).

The team literature suggests that team members can experience different distances: 1) objective distance (Hinds & McGrath, 2006), 2) communication distance (Foster, Abbey, Callow, Zu, & Wilbon, 2015) and 3) subjective distance (Siebdrat, Hoegl, & Ernst, 2014). In a team context, objective distance refers to the geographical distance between one team member's office and the main office of the audit team. Audit team members can work in different towns or countries and talk to each other with the aid of communication technologies (Broye & Weill, 2008; Gomez-Guillamon & Sanchez-Val, 2012; Hope et al., 2008; Numan & Willekens, 2012). There is evidence in the organisational and psychology literature to suggest that objective distance affects team behaviour, in that face-to-face meetings are more effective than communications through technologies (Bhappu, Griffith, & Northcraft, 1997; Hiltz, Johnson, & Turoff, 1986; Hollingshead, 1996; Straus, 1996). However, some studies do not find evidence of any impact of objective distance on performance (e.g. Siebdrat et al. 2014). Article 3 documents evidence that audit team objective distance is significant to some AQTB and that objective distance interacts with psychological distances. Psychological distances affect team perceptions and have been documented to influence team judgements and decisions (Weisner, 2015). Thus, objective distance can be considered as an audit team input that indirectly influences judgements and decisions and is therefore an audit team outcome. Audit team objective distance can contribute to knowledge about an audit team input as an antecedent to audit team quality (see Figure 1).

SDG 10: Is audit team distance associated to AQTBs? Subjective Distance

Subjective distance has developed in organisational literature from the related concept of psychological distance and construal level theory (CLT). Psychological distance includes temporal, spatial, social and hypothetical distance (Trope, Liberman, & Wakslak, 2007; Weisner, 2015). Temporal distance refers to how people can perceive differences in time, spatial distance refers to how people can perceive differences in proximity due to location, social distance is a concept that

[18] Industry distance is described as the distance between the auditor and the client, which can determine which industry uses which audit firm.

refers to how people perceive differences in interpersonal relationships and hypothetical distance refers to how people perceive distances due to the possibility of it occurring. These psychological distances have been found to influence evaluation, prediction and behaviour (Weisner, 2015), all of which are important elements in the audit team's work.

The organisational literature that has studied CLT with teams (Wilson, Crisp, & Mortensen, 2013) has found that interdependency, technological adaptation and prior performance can influence how objective distance can influence psychological distance. Audit research has mainly looked at psychological distances through the mindsets of auditors and how the ways of communicating information can influence scepticism, judgements and evaluations (Amit, Wakslak, & Trope, 2013; Backof, Carpenter, & Thayer, 2018; Weisner, 2015).

In the organisational and psychology literature, subjective distance is defined as how team members perceive themselves as distant from others in the team in terms of how team members differ (Siebdrat et al., 2014; Wilson, Boyer O'Leary, Metiu, & Jett, 2008). Subjective distance can therefore influence the way a team behaves due to feelings of unfamiliarity, insecurity and how unequal they feel to other team members. Siebdrat et al. (2014) find that subjective distance better predicts team outcomes than the level of objective distance. Article 3 found evidence to suggest that subjective distance is significantly related to AQTB, which implies that perceptions of unequal treatment in terms of subjective distance can influence audit team outcomes.

This dissertation discussion argues that subjective distance can also be a threat to the sustainability of the audit team. Since perceptions of the importance of achieving the UN's SDGs is likely to differ (Bebbington & Unerman, 2018; Burritt & Schaltegger, 2010; Gray, 2010), audit team members who work towards achieving the SDGs and those who are resistant to incorporating them into their work will perceive each other as different, ultimately creating large subjective distances. Since large subjective distance in teams can increase negative team outcomes (Siebdrat et al., 2014), it is likely that audit teams will need to consider how best to implement the audit of sustainability accounting to encourage all their members to work towards the achievement of the SDGs.

There will also be differences in the perceptions of the importance of audit teams' influence on sustainable futures, some believing that they are insignificant and others considering their vital role. As audit teams can also experience subjective distances from stakeholders external to the audit team, firm and industry, these external perspectives are likely to influence how well audit teams achieve the SDGs. If the audit team or society do not think that they play a role, neither will achieve it, but if society pressures audit teams to account for the SDGs it is possible that audit teams will work towards a sustainable audit quality. Therefore, subjective distance can contribute to knowledge about an audit team process antecedent to audit team quality (see Figure 1).

SDG 8: Is audit team distance associated with AQTB? Communication Distance

Communication distance refers to the distance experienced due to how much and how team members communicate. For team members who often interact by email, telephone, teleconferences and other virtual tools, the communication distance will be greater. According to the organisation and psychology literature, teams can experience different levels of communication distances that lead to misunderstanding, perceptions of unequal bias and lower process satisfaction (Bhappu et al., 1997; Hiltz et al., 1986; Hollingshead, 1996; Straus, 1996). Furthermore, communication through technologies could take longer in terms of time (Cappel & Windsor, 2000; Daly, 1993; Graetz, Boyle, Kimble, Thompson, & Garloch, 1998; Hollingshead, 1996; Straus, 1996). Audit research has found that face-to-face meetings are preferred and believed to be more effective than the use of communication tools (Agoglia, Hatfield, & Brazel, 2009; Brazel et al., 2004). Communication distance can therefore arise between team members when new technologies are introduced into the audit process.

Article 3 found that the psychological communication distance of perceptual distance due to the use of communication tools and the access and frequency of communication is significantly related to AQTB. Therefore, unequal treatment in audit teams, in terms of perceptual communication distance, leads to unethical behaviour that threatens audit team sustainability. Sustainable development decision making and evaluation tools are examples of a new technology in accounting and audit profession. They are based on the balanced scorecard inclusion of social, economic and environmental factors (Bebbington, Brown, & Frame, 2007) and the GRI guidelines on sustainability accounting (GRI, 2019; PWC, 2015). This research argues that communication distance is also likely to occur when new sustainable development technologies are implemented if audit teams are not properly trained (Daily & Huang, 2001), since misunderstandings and bias against sustainable development perspectives are likely to arise (Burritt & Schaltegger, 2010; Gray, 2010).

On the one hand, the development of AI technologies in the audit industry may have a positive influence on the services that audit teams can provide and can therefore help to achieve SDG 8. However, AI technologies can also take away the need for labour in a labour intensive service and may therefore threaten many audit teams' future employment opportunities. It is likely, then, that audit teams will experience a communication distance when new technologies are implemented and be resistant to technological advances in the audit team process.

Altogether, this research argues that the distance that communication technologies create due to the time they take from teamwork, bias perceptions and other misunderstandings between team members hinders audit team behaviour. Evidence on audit team communication distance can contribute to knowledge about an audit team process antecedent to audit team quality (see Figure 1).

SDG10: Are audit team equality perceptions associated with AQTB? Deindividuation and Social Identity

Accounting literature (Haynes, 2017) has acknowledged that equality can include matters such as social justice, classism, sexism, ageism and racism. One prominent and well-established theory in the psychology literature is called deindividuation and refers to how people treat each other unequally in a group. Several characteristics have been found to depict deindividuation, including a lack of self-awareness, lack of conscious planning, group unity, uninhibited behaviour and lack of concern about what others might think (Diener, 1979). Thus, teams that treat others disrespectfully also treat them unequally. Evidence has found a positive association between deindividuation and aggressive behaviour (Watson, 1973; Zimbardo, 2007). Article 4 found a significant relation between deindividuation and AQTB, which indicates that unequal treatment within teams can threaten audit team sustainability. In this research, deindividuation is considered an audit team process antecedent to audit team quality (see Figure 1).

Developments in psychology theory have found that social identity is strongly related to deindividuation and argue for the model of social identity deindividuation effects (SIDE). Social identity is a theory that was originally developed by Turner (1982), who describes identity at different levels: the personal level, social in-group level, human and animal levels (Haslam, Powell, & Turner, 2000). Therefore, social identity relates to how people identify with others who might define who they are or what they do. In an audit team, for example, team members might identify with the audit team's engagement and some audit teams may identify with the audit of a specific industry.[19] Article 4 found that social identity has a negative relation to AQTB, indicating that teams that identify with the team may reduce unethical behaviour and strengthen audit team sustainability.

Lee (2007) found that deindividuation is associated with group identity and greater group opinion polarisation. On the one hand, Johnson and Downing (1979) found that prosocial behaviour increases with positive cues and decreases with negative cues, which suggests that audit teams that experience positive social identity cues may decrease AQTB. On the other hand, if audit teams experience deindividuation and greater team identity, judgements and decisions may become polarised, causing less contradictory judgements to be made that threaten the quality of the audit. Reicher, Spears and Postmes (1995) suggest that deindividuation allows the team to express its identity, which can change its behaviour. Therefore, if some people in a team identify with those who deindividuate, and others in the team do not, sub-groups may form within a team and the behaviour between the groups in the team could threaten the quality of the team's work.

Postmes and Spears (1998) suggest that it is not the general social norms of the group, but the situation-specific norms of the group that induce threatening

[19] If the same team works on audits of several clients conducting business in the same industry.

behaviour when the group experiences deindividuation. Thus, the audit team's situation-specific norms, such as team roles, team size, team location and client type, may influence how deindividuation is experienced. Thomas, McGarty and Mavor (2009) find that team norms can help to shape a sustainable identity, which can lead to the team taking sustainable action towards the team's goals. Haslam et al. (2000) point out that it is the team that can shape the identity of an individual, rather than just the individual identifying with the team, and that this can help to shape the identity of teams to work towards sustainable goals. This research proposes that the inequality that deindividuation can inflict on a team and their work may be mitigated by the shaping of a team identity that stands for sustainability, rather than an identity at a personal, team or organisational level. Social identity is seen as an audit team process factor that is an antecedent to audit team quality (see Figure 1).

SDG 5: Are audit team gender equality perceptions associated with AQTB?
Gender, Gendering and Gender Equality

Audit research has documented evidence about how the differences between the sexes of auditors (Guthrie & Jones III, 2012; Hardies et al., 2014; Ittonen & Peni, 2012; Ittonen et al., 2013; Pierce & Sweeney, 2010) and the gendering of the audit firm and the audit process influence audit quality (Adapa, Rindfleish, & Sheridan, 2016; Anderson-Gough et al., 2005; Kornberger, Carter, & Ross-Smith, 2010). It has also been acknowledged (Lennox & Wu, 2016) that gender discrimination exists in the profession. The concept of differences between the sexes defines a biological difference between males and females, whereas gender is a social construction of masculinity and femininity resulting in gender relations based on social norms (Haynes, 2017). People can identify with a group through their gender identity, which Haynes (2017) states can intersect with other identities that can cause negative treatment by others.

In a study of the gendered discourses of professionalism in accounting organisations, Kirkham and Loft (1993) found that accounting bodies had purposefully encouraged the masculinisation of the accountancy profession in order to differentiate it from others, such as clerk or bookkeeper. This meant that women entering the profession had to adapt to a masculine work environment or be marginalised from the occupation. Anderson-Gough et al. (2005) found that women auditors were encouraged to act like their male counterparts and have a masculine approach to the job, which encouraged gender inequality. This could also lead to the development of different gendered roles within the audit team and mean that women who pursue an accountancy career will rarely achieve a leadership role in an audit team.

Ciancanelli et al. (1990) found that although more women have started to work for accounting organisations, the distribution of women in the hierarchy of accounting firms, such as partner, senior manager, manager and associate, is not equal. Supporting this, Duff (Duff, 2011) found that it is rare to have women in partner or director positions in audit firms in the UK, the US, Australia and New

Zealand, and even rarer to have ethnic minorities in higher positions in audit firms. Adapa, Rindfliesh and Sheridan (2016) found that women are less likely to be in higher positions in audit firms in Australia due to the stereotyped roles in which women are placed. Whiting and Wright (2001) found that female auditors in New Zealand are paid less per hour due to lower aspirations to work overtime and are therefore given lower job status. Gammie and Whiting (2013) found that women left the profession in the UK in a search for more interesting work and as an escape from the sense of inequality they felt in the profession. As a result, audit teams have been led by more males than females.

The representation of women in companies' annual reports (Adams & Harte, 1998), including those of audit firms (Duff, 2011), has shown evidence of a stereotyped and unequal portrayal of job roles between genders and race. Kornberger, Carter and Ross-Smith (2010) found that an audit firm initiative that was meant to reduce gender inequality actually perpetuated gender inequality, thereby causing no actionable change.

Article 4 found that gender equality perceptions are significantly related to some of AQTB, indicating that gender equality perceptions can threaten audit team sustainability. This is supported by the psychology literature. For example, Postmes and Spears (2002) found that gender differences occur due to the self-stereotyping of feminine and masculine attitudes and behaviour during group discussions. Therefore, when audit teams discuss the risks and make audit judgements they may be influenced by their own self-stereotyping of feminine and masculine attitudes and behaviour. This suggests that audit teams need to overcome many different obstacles in order to improve gender equality in audit teams. In order for audit teams to work towards the UN's SDG to improve gender equality, this research proposes that audit teams will need to address all the inequalities that influence the team and shape an identity for sustainable action. Gender equality is therefore considered an audit team process antecedent to audit team quality (see Figure 1).

Conclusion and Contributions

This research has generated knowledge that fills the research gap on audit teams and their influence on audit quality through the perspective of the UN's SDGs: SDG 3 on health and well-being, SDG 5 on gender equality, SDG 8 on decent work and economic growth, SDG 10 on reduced inequalities, SDG 16 on peace and justice and strong institutions and SDG 17 on partnerships for the goals. A unique set of data has been collected that contains information about auditors who have worked on the same engagements in the same team. The data has been collected by interviews and questionnaire surveys conducted in a field study, which have provided information that can be analysed using a qualitative and quantitative approach. The data has also included proprietary information about audit team client characteristics from a Big 4 audit firm. More specifically, this research has

contributed to audit team, audit quality and the role of accounting in the achievement of the UN's SDGs by answering several research questions.

The results have contributed to a better understanding of audit quality antecedents through a sustainability perspective with the aid of the psychology literature. Audit teams differ from other workplace teams in that team members can be involved in several audit teams simultaneously and can be members of a team for several years. Some members of the team are certified auditors, while others are trainees who take on different responsibilities and different roles in simultaneous audit team engagements. The very nature of audit work means that independence from the client is of the utmost importance, which in turn means that the responsibilities and accountability of the audit team are great. Furthermore, audit team have a significant role to play in the work towards achievement of the SDGs (Bebbington & Unerman, 2018). Hence, this research can also contribute to the existing knowledge in team literature.

This study can also assist in a comparison of the context of auditing in Sweden with previous research results around the world. As most national audits in Sweden are with SMEs that are exempt from statutory audits, but that nevertheless request voluntary audits, the data from Swedish audit offices can be of interest to research concerned with the legitimacy and confidence building of audit work. Paradoxically, Sweden's increasingly less homogenous society (SCB, 2019) and increased inequality (OECD, 2015) can provide a context in which audit firms need to account for the equality and well-being of their audit teams.

Firstly, the research (see article 1) has contributed knowledge about audit team structures. The theory of hierarchical structures and the power of control of resources has been discussed in relation to how audit team composition structure is selected as an audit quality input. Audit team composition selection influences audit processes, such as the competence, availability and development opportunities that can be hindered by team size and team changes. Furthermore, the theory of hierarchical status structures has revealed how audit team role structures influence how audit teams define themselves. Some audit teams include a specialist as a team member, while other audit teams exclude specialists as members of the audit team, which has proved to influence team behaviour. This research proposes that knowledge about how audit teams are structured can shed light on how well audit firms can "Develop effective, accountable and transparent institutions at all levels. Ensure responsive, inclusive, participatory and representative decision-making at all levels" (United Nations, 2017) and therefore contribute to the achievement of the UN's SDG 16.

Hierarchical status relations also explain how audit teams function, since audit managers can be associates with several roles in audit teams, which can change their status in the team. Therefore, audit team hierarchical status relations have been identified as an audit team process as an antecedent to audit quality (see Figure 1). Hierarchical structures may induce unequal interactions between audit team roles due to the power of control of audit team inputs and the status of audit team members during the audit process. Furthermore, the theory of trust has helped to explain an audit team process as an antecedent to audit

quality (see Figure 1). Trust emerged as an explanation to how an audit team's role structure process functions between the AIC and the audit team, which builds on the existing knowledge about trust in an audit context (Power, 1996). Trust, status and power relations in audit teams have contributed to answer the question why audit team structures influence audit outcomes. This research proposes that knowledge about how audit team structures function and why these structures influence audit outcomes can contribute to knowledge about how an audit team can "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (United Nations, 2017) and "empower and promote the social, economic and political inclusion of all" (United Nations, 2017), thereby contribute to the achievement of the UN's SDGs 8 and 10.

Secondly, the research (see article 2) has contributed information about audit teams' well-being through an investigation of stress in audit teams and the use of the input-process-output (Ilgen et al., 2005) framework and team role stress theory (Dietz et al., 2012; Savelsbergh et al., 2012). The interview questions asked which team stress inputs audit teams experienced. The results showed that audit team role stress is experienced, in that the stress reported by respondents is initiated by interactions within the team. The data also showed that three different forms of stress - physical, cognitive and behavioural- had been experienced by audit teams when teams experienced different team role stressors. Team stress differs from individual stress in that the stress has originated from team factors and different forms of stress can develop due to team interactions.

The study also asked which team stress processes trigger audit teams. The findings showed that team role stress may be mitigated or triggered by the audit teams' intrinsic motivations. Intrinsic motivation has developed in research from the theory of self-determination (Deci & Ryan, 2008) and builds on audit literature knowledge about intrinsic motivation and its influence on audit quality (Kadous & Zhou, 2015; Peytcheva et al., 2014). Knowledge about intrinsic motivation in audit teams can contribute to audit practice and regulators' understanding of audit team processes (see Figure 1). This research proposes that knowledge about the type of stress that audit teams experience and which audit team processes trigger audit team stress can help to "Ensure healthy lives and promote well-being for all" (United Nations, 2017) and therefore work towards achieving the UN's SDG 3.

Further connection with audit quality was found when interviews revealed what the consequences of audit team stress could be and how audit teams influence audit judgements and decisions. The respondents revealed a common theme, namely that they thought it likely that AQTB would occur more frequently when the team experienced different role stressors and their intrinsic motivations were not met. Since AQTB has been connected to the scandals that audit firms have been involved in over several decades (Bedard et al., 2008; Cullinan, 2004), this research finding is significantly important for regulators and audit firms that need to better understand how to curb such behaviour. This research proposes that knowledge about the consequences of audit team stress can help to "promote sustained, inclusive and sustainable economic growth, full and productive

employment and decent work for all" (United Nations, 2017) and therefore work towards the UN's SDG 8. Furthermore, this research proposes that knowledge about the determinants of AQTB can help to "develop effective, accountable and transparent institutions at all levels. Ensure responsive, inclusive, participatory and representative decision-making at all levels" (United Nations, 2017) and therefore work towards the UN's SDG 16 .

Thirdly, the research (see article 3) has contributed evidence about audit team distance perceptions and its influence on unethical audit team behaviour. Based on team literature, this research asked what kind of distances influence AQTB and found that three types of team distance can be experienced in audit teams: subjective, communication and objective. The perceptions of high subjective and communication distances measure a sense of inequality in the team; the more teams sense a subjective or communication distance, the more they experiences interactions that are deemed unequal. This research proposes that knowledge about audit team distances can help to "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all…empower and promote the social, economic and political inclusion of all" (United Nations, 2017) and thereby contribute to the achievement of the UN's SDGs 8 and 10.

Also, the results found that the three different team distances can help to explain when an audit team might display AQTB. The distances experienced by audit teams influence different individual behaviour, which builds on audit literature knowledge about audit team dynamics and communication tools (Agoglia et al., 2009; Brazel et al., 2004; Trotman et al., 2015) as well as AQTB (Alderman & Deitrick, 1982; Coram et al., 2008; Sweeney & Pierce, 2015). It also contributes to practitioners' and regulators' knowledge about audit team inputs and processes (see Figure 1). Furthermore, this research suggests that knowledge about audit team distances and their influence on AQTB can help to "develop effective, accountable and transparent institutions at all levels. Ensure responsive, inclusive, participatory and representative decision-making at all levels" (United Nations, 2017) and therefore contribute to the achievement of the UN's SDG 16.

Finally, the research has contributed knowledge about the audit team's equality influence on AQTB (see article 4). Team equality is operationalised by not only measuring audit team gender equality, but also other inequalities that are known to occur in teams through the use of the SIDE model theory (E.-J. Lee, 2007; Reicher et al., 1995). This research investigates whether deindividuation, social identity and status are associated with AQTB. The findings are that audit team deindividuation is positively associated with AQTB and that audit team social identity and status is negatively associated with AQTB. Furthermore, the research included audit team gender equality perceptions as a possible influence on AQTB. The results show that audit team gender equality perceptions are associated with different individual AQTB. Therefore, audit teams that can build a strong social identity and status may be able to reduce the influence of inequalities in a team. Moreover, and consistent with Haslam et al. (2000), if audit teams are to work towards accounting for sustainability in the workplace and in their work, a sustainability identity could be beneficial.

Altogether, this research builds on audit literature knowledge about gender discrimination in the audit context (Hardies, Breesch, & Branson, 2011; Lennox & Wu, 2016). It contributes to practitioners' and regulators' knowledge about audit team process antecedent to audit team quality (see Figure 1). This research proposes that knowledge about the influence of audit team equality on AQTB can help to "achieve gender equality… empower and promote the social, economic and political inclusion of all…Develop effective, accountable and transparent institutions at all levels. Ensure responsive, inclusive, participatory and representative decision-making at all levels" (United Nations, 2017) and therefore contribute to the achievement of the UN's SDGs 5, 10, 16.

To conclude, these four separate studies have contributed to an overall research project by means of an initial investigation into the practising audit team and a field study that has revealed how the audit team can affect audit quality. The research project has taken an analytical perspective through the use of the UN's SDGs in an attempt to better understand what audit quality is and how it can be improved. As auditors and the accounting profession play a significant role between organisations, regulators and society in the achievement of the UN's SDGs (Bebbington & Unerman, 2018), this and future research projects can contribute to a better understanding of "multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of SDGs" (United Nations, 2017) and thereby contribute to the UN's SDG 17.

Limitations and Future Research

There are some limitations to the research that need to be considered. Firstly, the interviews were conducted in small offices due to ease of access to the audit profession. Access to audit firms is a known problem of audit research. This research could have benefited from comparisons with audit teams at larger offices, which may have revealed more about the research topics. Also, group interviews may have negatively influenced the ways in which participants responded due to social bias. However, the results gained at smaller offices have been insightful and produced early knowledge about audit teams. The research should also be applicable to other audit markets and smaller audit firms, in that team members' perceptions on the research topics are similar across different audit teams, audit firms and even different countries.

Secondly, audit teams were selected with members who were not in other cooperating audit teams, so that no answers were from duplicated participants. This often meant that all the possible responses from an audit team member participating in a team engagement were not expressed. Future research could improve on this design to attempt to collect data from every single audit team member and then perhaps have fewer audit teams in the sample. One way to overcome the smaller sample could be to use the questionnaire in several audit firms in order to obtain comparison data. Consequently, the data set could include data at an individual, team and organisation level in order to conduct a

multi-level method. It has been acknowledged that missing team members may have given different perspectives.

Thirdly, it has been acknowledged that there is a risk that respondents may not always give honest answers when discussing sensitive subjects, such as AQTB and stress. An analysis of the responses to AQTB in the questionnaire showed that most (50%) of the respondents perceived that their team rarely displayed AQTB, which means that they perceived that it never happened. This could be considered as a precautious response to inform the researcher that it does happen, but not very often. Only 36% of respondents perceived that AQTB never happened in their team experience, 9% perceived that AQTB sometimes happened, 4% perceived that AQTB often occurred and 1% perceived that AQTB always happened. Future research, practitioners and regulators may want to consider how significant this kind of behaviour is to the quality of the audit.

Fourthly, future research could gain from a longitudinal study that captured the temporal influence of audit teams, given that audit teams can work on an audit engagement for several years. Lastly, an observational study that directly investigates the audit teams' experience of auditing sustainability accounts and works with sustainability in their own workplace could help to improve our knowledge about audit team interactions and their work towards the achievements of the UN's SDGs.

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Appendix

Interview Guide

Thank you for agreeing to participate in this study. Our goal is to learn more about audit teams and audit quality. The questions are designed to get a sense of how audit teams are structured, how audit team behaviour is effected by different audit team factors and how the well-being of auditors affects audit work. Your answers will be completely confidential and no names will be used in the written research. We expect this interview to take about 30 minutes to an hour. You are welcome to contact us later if you have anything you would like to address. Do you have any questions before we start?

Before we start, can you tell me a little about yourself as an auditor in this firm?

Position, age, experience, training, development…

1. First, try to think about a recent audit team experience. Can you tell me about the audit team?
    a. How was the audit team formed? Roles? Composition? Distance? Size?
    b. When did you become a member of the team?
    c. How and by whom was the team formed?
    d. How would you define an audit team?
    e. How well did the members of the team work together?
    f. Which team member did you work closest with?
    g. Was anything else needed/lacking?
    h. How has the size of the audit team influenced or not influenced the audit team work?
    i. Audit team behaviour?

2. Did any members of the team need to communicate long distance? If no, can you think of an audit team that had to use long distance communication?
    a. How has communicating long distance with the use of technologies influenced or not influenced the team's ability to do their work?
    b. Affected team behaviour?

3. Now we would like you to think about the overall competence of the audit team.
    a. What were the strongest and weakest points of the audit team, in relation to the competence of the team?
    b. Were there any skills or knowledge that were useful or lacking?
    c. What encouraged you or other team members to work too hard, when you or they would have done otherwise?

    d. What encouraged you or other team members to work harder, when you or they would have done otherwise?
    e. How has the motivation of the team influenced or not influenced the audit team work?
    f. Auditor behaviour?

4. Here is a list of AQTB acknowledged in previous research (give them a list).
    a. What do you and your team members think about these kinds of behaviour?
    b. Does any other behaviour occur?
    c. How would you define audit quality?

5. Now I would like you to think about the overall well-being of the audit team.
    a. How did you or the team handle stress?
    b. How has the stress influenced or not influenced the audit work?
    c. Auditor behaviour?
    d. Was the stress of your last audit team task too much for you or other team members to handle?
    e. Can you give an example of a situation that really stressed you or another member of your team out?
    f. Can you give an example of when you worked with a team that faced a very stressful problem?
    g. Did you or other team members enjoy working under stress?

Full Questionnaire

Umeå School of Business and Economics
Umeå University

Audit Teams

Dear Participant,

The purpose of this survey is to collect data on auditors' experience with audit teams. We conduct research at Umeå School of Business and Economics at Umeå University and hope to learn from your expertise. The questions are based on previous research about team roles, communication, motivation, competence, well-being, as well as the quality of team work and the aim is to investigate whether this research holds true for audit team work. We would be grateful if you could answer a few questions about your experience of the specified audit team engagement in 2015, which should take about 20-30 minutes. The information you give us will help us to better understand what an audit team experiences and how the audit team works. The data we collect could help develop knowledge about how to improve team experiences and future staff training and thus the quality of the audit. Information about which audit team factors influence audit quality can also be used as a signal to attract or retain clients, for internal and external standards and regulations, to the shareholders and other external stakeholders. We hope to publish the results in the best audit / accounting journals. Your answers will be kept completely anonymous and therefore confidential.

Thank you for participating in our survey. Your feedback is important.

Alice Annelin, PhD student
(alice.annelin@umu.se)

Tobias Svanström, Associate Professor
(tobias.svanstrom@umu.se)

Umeå School of Business and Economics
Umeå University

1. Please write your name

2. Please write the ID number of the engagement client that you have been assigned to for this survey about the audit team for the audit of the fiscal year of 2015 (audit period 07/2015-06/2016)

3. What industry does your audit team engagement belong to?

- ◯ Manufacturing
- ◯ Commodities
- ◯ Public Sector
- ◯ Business and Financial Services
- ◯ Production
- ◯ Agriculture
- ◯ Other (please specify)

4. Was the audit opinion

- ◯ Unqualified?
- ◯ Qualified?
- ◯ Adverse?
- ◯ Disclaimer?
- ◯ Do not know
- ◯ Other (please specify)

5. If you did not answer Unqualified in the previous question, please explain the reason.

6. Relative to your other engagements with similar client characteristics, how would you rate the overall audit quality of this engagement, **from 1 (low) to 5 (high)**?

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

7. Please indicate which activities you performed or reviewed, or both.

	Performing the task	Reviewing the audit work
Planning the audit	☐	☐
Staffing of the engagement	☐	☐
Understanding the audit client	☐	☐
Risk Assessment Procedures	☐	☐
Test of Internal Controls	☐	☐
Test of Details of Account Balances and Disclosures	☐	☐
Substantive Tests of Transactions	☐	☐
Writing of the audit report	☐	☐
Non-audit services	☐	☐
Documentation	☐	☐

8. What role did you have in the specified audit team engagement?

- ◯ Auditor In Charge
- ◯ Audit Manager
- ◯ Senor Assistant/Associate
- ◯ Junior Assistant/Associate
- ◯ Other (please specify)
- ◯ Tax Specialist
- ◯ VAT Specialist
- ◯ Other Specialist

9. How many years have you worked on this specific audit team engagement?

10. How many years have you worked on this specific audit team engagement in this role?

11. Relative to your other engagements with similar client characteristics, how would you rate the overall audit effort of this engagement, **from 1 (low) to 5 (high)**?

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

12. How many hours did you work on the specified audit team engagement in the period 07/2015-06/2016?

at the client's office?	
at the audit office?	
at home?	
other?	

13. Did you spend more or less hours on the engagement compared with the plan?

More (how many hours?)	
Less (how many hours?)	
Same number of hours as planned (how many hours?)	

14. Did you work overtime during the audit of this engagement?

- ◯ Yes
- ◯ No

15. If yes, how many overtime hours did you work?

16. How many hours did you work with non-audit services for the specified audit team engagement client in the period 07/2015-06/2016?

17. Was your specific audit team experience part of a larger corporate group audit team engagement?

◯ Yes ◯ No

18. If yes,

how many different audit teams was your audit team in contact with during the period 07/2015-06/2016?

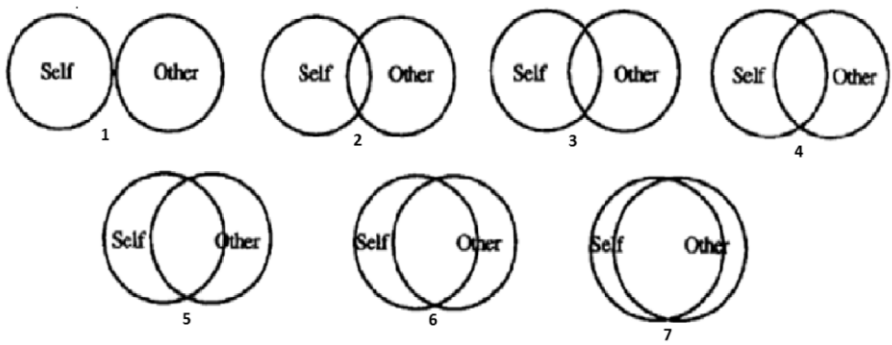
of these, how many audit teams were at a different office?

of these, how many audit teams were in another country?

19. Please rank what you consider to be your highest (1) to lowest (9) priority while working as an auditor? (Every option should be given a number)

- The Client/ Customer
- The Shareholder
- The Audit Firm
- The Audit Office
- The Regulators
- The Wider Society
- The Audit Team
- Yourself
- Other

Look at the picture and answer the question below



20. Select the number that corresponds to the picture that most closely matches your relationship with the other audit team members.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5 ◯ 6 ◯ 7

21. **From 1 (Not well) to 5 (Very Well),** please indicate how well you know the people in the specified team.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

22. Did you meet others in the specified audit team for non-work related activities, e.g. social activities, sports, music or other similar activities?

◯ Yes ◯ No

23. How many meetings did you attend during your specified audit team engagement during the period 07/2015-06/2016?

24. **From 1 (Strongly Disagree) to 5 (Strongly Agree)**, please indicate how much do you agree with the following statements.

	1	2	3	4	5
I could easily visit most team members with whom I collaborated on the audit engagement	◯	◯	◯	◯	◯
It was easy to get the team members together in one place for spontaneous meetings (e.g., for discussions and decisions)	◯	◯	◯	◯	◯
In this team we had frequent face-to-face meetings with all team members	◯	◯	◯	◯	◯

25. To which % has team communication been channeled through

the phone?	
email?	
teleconferencing (e.g. Skype)?	
other virtual tools?	

26. **From 1 (Never) to 5 (Always),** please indicate how often you received audit specific information from team members.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

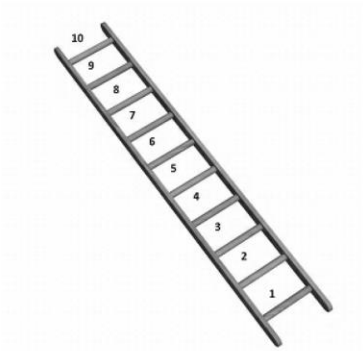
27. **From 1 (not at all) to 5 (Heavily)**, please indicate to what extent you relied on team members to accomplish your work.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

28. From 1 (Strongly Disagree) to 5 (Strongly Agree), please indicate how much you agree with the following statements

	1	2	3	4	5
I enjoy the kind of work we do in this team	◯	◯	◯	◯	◯
Working on this team is an exercise in frustration	◯	◯	◯	◯	◯
Generally speaking, I am very satisfied with this team	◯	◯	◯	◯	◯

Please look at the picture and answer the question below



29. If the **TOP** is the best off (those who have the most money, most education and the best jobs) and the **BOTTOM** is the worst off (those who have the least money, least education and the worst jobs) where would you put yourself on a ladder **between 10 (Top) and 1 (Bottom)** in relation to you and the other audit team members.

- ◯ 10
- ◯ 9
- ◯ 8
- ◯ 7
- ◯ 6
- ◯ 5
- ◯ 4
- ◯ 3
- ◯ 2
- ◯ 1

30. From 1 (Extremely Dissatisfied) to 5 (Extremely Satisfied), please indicate your satisfaction with standard of living.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

31. From 1 (Totally Insecure) to 5 (Totally Secure), please indicate your feeling of financial security for the future.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

32. Previous research that has studied auditors' behaviours has found that there are several different types of behaviours that occur during an audit. **From 1 (Never) to 5 (Always)**, please indicate how often the audit team members of the specified audit engagement conducted the behaviours listed below.

	1	2	3	4	5
Reduce the amount of work performed on an audit step below what you consider reasonable	◯	◯	◯	◯	◯
Under report audit time	◯	◯	◯	◯	◯
Sign off an audit-program step without completing the work or noting the omission	◯	◯	◯	◯	◯
Make an unauthorised reduction of sample size	◯	◯	◯	◯	◯
Have a greater than appropriate reliance on client work	◯	◯	◯	◯	◯
Accept weak client explanations	◯	◯	◯	◯	◯
Make superficial reviews of client documents	◯	◯	◯	◯	◯
Fail to investigate an accounting principle	◯	◯	◯	◯	◯

Other (please specify)

33. **From 1 (Strongly Disagree) to 5 (Strongly Agree),** please indicate how much you agree with the following statements in relation to your experience on the specified audit team engagement.

	1	2	3	4	5
I devoted much attention to my behaviour on this team engagement	◯	◯	◯	◯	◯
I did't care what others think of me	◯	◯	◯	◯	◯
I was self-conscious during the specified audit meeting(s)	◯	◯	◯	◯	◯
I didn't feel free during the specified audit	◯	◯	◯	◯	◯
I did what I wanted	◯	◯	◯	◯	◯
My behaviour was affected by others' behaviour	◯	◯	◯	◯	◯
My behaviour in the team was not hesitant	◯	◯	◯	◯	◯

34. From 1 (Totally Disagree) to 5 (Totally Agree), please indicate how much you agree with the following statements.

	1	2	3	4	5
My firm is known as a leader in promoting professional ethics within the profession	◯	◯	◯	◯	◯
Top management in my firm has let it be known in no uncertain terms that unethical behaviours will not be tolerated	◯	◯	◯	◯	◯
In my firm, I sometimes perceive that managers and partners engage in behaviours that I consider to be unethical	◯	◯	◯	◯	◯

35. **From 1 (Strongly Disagree) to 5 (Strongly Agree),** please indicate how much you agree with the following statements.

	1	2	3	4	5
An education is more important for a male than a female audit team member	◯	◯	◯	◯	◯
When jobs are scarce, male audit team members should have more right to a job than female audit team members	◯	◯	◯	◯	◯
On the whole, females make better audit team leaders than males	◯	◯	◯	◯	◯
It is important that male and female audit team members share the responsibilities for the audit engagement	◯	◯	◯	◯	◯
Gender equality is important in the audit team	◯	◯	◯	◯	◯
The audit firm should try to influence the audit team to increase gender equality in audit teams	◯	◯	◯	◯	◯

36. Previous research has described the term "Gender" as how masculine or feminine a person is due to their social, cultural or psychological differences. **From 1 (Not at all Gender equal) to 5 (Completely Gender Equal)**, please indicate how you rate the gender equality in the specified audit team in terms of how team members were treated due to their masculinity or femininity.

◯ 1 ◯ 2 ◯ 3 ◯ 4 ◯ 5

37. **From 1 (Never True) to 5 (Always True),** please indicate how much the following statements are true for you during your experience of the specified audit team engagement.

	1	2	3	4	5
I was not that concerned about what other people think of my work	◯	◯	◯	◯	◯
I preferred having someone set clear goals for me in my work	◯	◯	◯	◯	◯
The more difficult the problem, the more I enjoyed trying to solve it	◯	◯	◯	◯	◯
I was keenly aware of the income goals I have for myself	◯	◯	◯	◯	◯
I wanted my work to provide me with opportunities to increase my knowledge and skills	◯	◯	◯	◯	◯
To me, success meant doing better than other people	◯	◯	◯	◯	◯
I preferred to figure things out for myself	◯	◯	◯	◯	◯
No matter what the outcome of the audit, I was satisfied if I felt I gained a new experience	◯	◯	◯	◯	◯
I enjoyed relatively simple, straightforward tasks	◯	◯	◯	◯	◯
Curiosity was the driving force behind much of what I did	◯	◯	◯	◯	◯
I was less concerned with what work I did than what I got for it	◯	◯	◯	◯	◯
I enjoyed tackling problems that were completely new to me	◯	◯	◯	◯	◯
I preferred work I knew I could do well over work that stretched my abilities	◯	◯	◯	◯	◯
I was concerned about how other people were going to react to my ideas	◯	◯	◯	◯	◯
I seldom thought about salary and promotions	◯	◯	◯	◯	◯
I was more comfortable when I could set my own goals	◯	◯	◯	◯	◯
I believed that there was no point in doing a good job if nobody else knew about it	◯	◯	◯	◯	◯
I was strongly motivated by the money I could earn	◯	◯	◯	◯	◯
It was important to me to do what I most enjoyed	◯	◯	◯	◯	◯
I preferred working on tasks with clearly specified procedures	◯	◯	◯	◯	◯
As long as I could do what I enjoyed, I was not that concerned about exactly what I was paid	◯	◯	◯	◯	◯
I enjoyed doing work that is so absorbing that I forgot about everything else	◯	◯	◯	◯	◯
I was strongly motivated by the recognition I could earn from other people	◯	◯	◯	◯	◯
I had to feel that I was earning something for what I did	◯	◯	◯	◯	◯
I enjoyed trying to solve complex audit tasks	◯	◯	◯	◯	◯
It was important to me to have an outlet for self-expression	◯	◯	◯	◯	◯
I wanted to find out how good I really could be at my work	◯	◯	◯	◯	◯
I wanted other people to find out how good I really could be at my work	◯	◯	◯	◯	◯
What mattered most to me was enjoying what I did	◯	◯	◯	◯	◯

38. **From 1 (Strongly Disagree) to 5 (Strongly Agree),** please indicate how much you agree with the following statements.

	1	2	3	4	5
Members are clear about team goals	○	○	○	○	○
Members agree with team goals	○	○	○	○	○
Team tasks require us to work together	○	○	○	○	○
Members are clear about their roles	○	○	○	○	○
Members accept their roles	○	○	○	○	○
Members' assignments match their abilities	○	○	○	○	○
The team leader's style changes when necessary to meet emerging team needs	○	○	○	○	○
The team has an open communication structure that allows all members to participate	○	○	○	○	○
The team gets regular feedback about its productivity	○	○	○	○	○
Members give each other constructive feedback	○	○	○	○	○
The team uses feedback about its effectiveness to make improvements in how it is functioning	○	○	○	○	○
The team spends time defining and discussing problems it must solve	○	○	○	○	○
Members spend time planning how they will solve problems and make decisions	○	○	○	○	○
The team uses effective decision-making strategies	○	○	○	○	○
The team implements its solutions and decisions	○	○	○	○	○
The team develops methods to evaluate its solutions and decisions	○	○	○	○	○
The team accepts members who behave differently as long as their behaviour is perceived as helpful to the task accomplishment	○	○	○	○	○
Team norms encourage high performance, quality and success	○	○	○	○	○
Team norms encourage innovative solutions	○	○	○	○	○
Sub-teams are accepted and integrated into the team as a whole	○	○	○	○	○
The team contains the smallest number of members necessary to accomplish its goals	○	○	○	○	○
The team has been given sufficient time to develop a mature working unit and to accomplish its goals	○	○	○	○	○
The team is highly cohesive and cooperative	○	○	○	○	○
Periods of conflict are frequent but brief	○	○	○	○	○
The team uses effective conflict management strategies	○	○	○	○	○

39. **From 1 (Never True) to 5 (Always True)** please indicate how much the statements below hold true for you.

	1	2	3	4	5
Members of this work team have more than enough talent and experience for the kind of work that we do	◯	◯	◯	◯	◯
Everyone in this team has the special skills that are needed for team work	◯	◯	◯	◯	◯
Some members of this team lack the knowledge and skills that they need to do their parts of the team's work	◯	◯	◯	◯	◯

40. How would you describe your experience using information technologies prior to your training as an audit firm employee?

- ◯ No prior experience
- ◯ Exposed to such systems, but never used them before
- ◯ A little experience/Have used them before
- ◯ Moderate experience
- ◯ A lot of experience

41. **From 1 (Never True) to 5 (Always True),** please indicate how much the statements below hold true for your specific audit team.

	1	2	3	4	5
The team enjoyed getting into the details of how things work	◯	◯	◯	◯	◯
Technical things fascinate the team	◯	◯	◯	◯	◯
One of the team's skills was that they were good at making things work	◯	◯	◯	◯	◯
Following directions and filling out forms came easily for the team	◯	◯	◯	◯	◯
The team was good at completing the tasks they were assigned to do	◯	◯	◯	◯	◯
The team understood how to do the basic tasks required of them	◯	◯	◯	◯	◯
The team coould assess the technical feasibility of alternative courses of action	◯	◯	◯	◯	◯
The team kept up-to-date with developments in their technical area of expertise	◯	◯	◯	◯	◯
The team could assist subordinates in resolving technical problems	◯	◯	◯	◯	◯

42. Do you have a specialisation in the audit company?

- ◯ IT
- ◯ Insurance
- ◯ Local Audits
- ◯ Corporate Finance
- ◯ IFRS
- ◯ None
- ◯ Tax
- ◯ Transactions
- ◯ Advice/ Consultancy
- ◯ Global Audits
- ◯ Other (please specify)

43. What is the highest level of education you have completed?

- ☐ Bachelor degree (3 years higher education)
- ☐ MBA
- ☐ Post-Graduate degree (4-6 years higher education)
- ☐ PhD (Doctoral degree)
- ☐ Master degree (2 year higher education)
- ☐ Other (please specify)

44. How many hours of continuing professional education have you had between 2000 and 2016?

45. **From 1 (Strongly Disagree) to 5 (Strongly Agree),** please indicate how much you agree with the following statements in relation to your experience of the specified audit team engagement.

	1	2	3	4	5
The team puts in extra hours to keep on top of the work	◯	◯	◯	◯	◯
The team is responsible for an almost unmanageable number of assignments at the same time	◯	◯	◯	◯	◯
The team simply has more work to do than can be done in an ordinary day	◯	◯	◯	◯	◯
Team members feel they don't have time to take occasional break	◯	◯	◯	◯	◯
The tasks assigned to the team are too difficult and/or complex	◯	◯	◯	◯	◯
Team tasks seem to be getting more and more complex	◯	◯	◯	◯	◯
The organization expects more of the team than is achievable with the skills and/or abilities in the team	◯	◯	◯	◯	◯
The work duties and objectives of the team are unclear to the team members	◯	◯	◯	◯	◯
It is unclear to the team who it should report to and/or who reports to the team	◯	◯	◯	◯	◯
The team lacks the authority to carry out its work responsibilities	◯	◯	◯	◯	◯
The team does not fully understand what is expected of it	◯	◯	◯	◯	◯
The team does not completely understand the part its assignment plays in meeting overall organizational objectives	◯	◯	◯	◯	◯
The team does things that are accepted by one person and not by others	◯	◯	◯	◯	◯
The team receives conflicting requests from two or more people	◯	◯	◯	◯	◯
The team receives an assignment without adequate resources and materials to execute.	◯	◯	◯	◯	◯
The team always finds new and interesting aspects in their work	◯	◯	◯	◯	◯
There are days when the team feels tired before they arrive at work	◯	◯	◯	◯	◯
It happens more and more often that the team talks about their work in a negative way	◯	◯	◯	◯	◯
After work, the team tends to need more time than in the past in order to relax and feel better	◯	◯	◯	◯	◯
The team can tolerate the pressure of their work very well	◯	◯	◯	◯	◯
Lately, the team tends to think less at work and do their job almost mechanically	◯	◯	◯	◯	◯
the team finds their work to be a positive challenge	◯	◯	◯	◯	◯
During their work, the team often feels emotionally drained	◯	◯	◯	◯	◯
Over time, the team can become disconnected from this type of work	◯	◯	◯	◯	◯
After work, the team has enough time for their leisure activities	◯	◯	◯	◯	◯
Sometimes the team feels sickened by their work tasks	◯	◯	◯	◯	◯
After their work, the team usually feels worn out and weary	◯	◯	◯	◯	◯
This is the only type of work that the team can imagine theirself doing	◯	◯	◯	◯	◯
Usually, the team can manage the amount of their work well	◯	◯	◯	◯	◯
The team feels more and more engaged in their work	◯	◯	◯	◯	◯
When the team works, they usually feel energised	◯	◯	◯	◯	◯

46. What is your gender?

- ◯ Female
- ◯ Male

47. How old are you?

48. What position do you have at the audit firm?

- ◯ Partner
- ◯ Executive Director
- ◯ Director
- ◯ Other (please specify)
- ◯ Senior Manager
- ◯ Manager
- ◯ Assistant

49. From 1 (Not Important) to 5 (Very Important), please indicate how important you consider the following team positions to be for the overall audit quality

	1	2	3	4	5
Partner	◯	◯	◯	◯	◯
Senior Manager	◯	◯	◯	◯	◯
Manager	◯	◯	◯	◯	◯
Senior Assistant/ Associate	◯	◯	◯	◯	◯
Junior Assistant/ Associate	◯	◯	◯	◯	◯
Specialist	◯	◯	◯	◯	◯

50. How many years have you been employed at the present audit firm?

51. How many years have you worked in the audit profession?

52. From 1 (Strongly Disagree) to 5 (Strongly Agree), please tell us about your experiences

	1	2	3	4	5
I would prefer another more ideal job than the one I now work in	◯	◯	◯	◯	◯
I have thought about changing firms since I began working here	◯	◯	◯	◯	◯
If I have my own way, I will be working for this firm three years from now	◯	◯	◯	◯	◯

53. What town is your audit office placed?

54. How many employees work on audits at your office?

55. How many certified auditors are at your office?

56. How many audit engagements did you work on during the period 07/2015-06/2016?

57. Which industries did your audit engagements belong to in 07/2015-06/2016 ? Please give the percent of each to your total work in 07/2015- 06/2016 (summing up to 100%)

Manufacturing	
Business and Financial Services	
Commodities	
Production	
Public sector	
Agriculture	
Other	

58. Do you have any other comments, questions, or concerns?

Table 2: Descriptive Statistics

Individual response rate	43%				
Team response rate	85%				
	Frequency				
Sectors	10				
Audit Office Towns	59				
Male	190				
Female	146				
Associates	81				
Senior Associates	23				
Assistant Manager	34				
Manager	64				
Senior Manager	34				
Director	53				
Executive Director	1				
Partner	44				
Teams	185				
		Mean	**SD**	**Min**	**Max**
Actual Team Size		19	12	3	97
Client Size				<1 million SEK	>3 billion SEK
Age		36	9	24	86
Experience in audit profession (in years)		14	13	1	65