Business ethics and the influence on the development of intellectual capital: A study of the auditing profession

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We would also like to thank our family and friends for giving encouragement and support in our darkest ours.

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Olle Schultz    Dennis Tran
Abstract

The purpose of this study is to explain how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms. The dependent variable, intellectual capital, has been derived from previous studies and includes under-concepts human capital, organizational capital and social capital. The independent variables are inspired from Sylvander (2015) and consist of the two ethical aspects: managerial ethics and professional ethics.

The sample of this study consists of 64 auditors geographically spread in Sweden. The respondents stem from both Big 4 audit firms as well as smaller firms. The participants are members of the Supervisory Board of Public Accountants in Sweden where we gathered our 3066 email addresses from. These auditors where then asked to answer the questionnaire provided through SurveyMonkey.

The design of this study is based on a fundamental positivistic philosophy with a deductive approach. As a result, an empirical quantitative method with a cross-sectional design was chosen. The theoretical framework provided in this study is in general based on social exchange theory, behavioural theory, upper-echelon theory and profession theory.

The findings of the study indicate that a stronger reliance on managerial ethics in decision-making is positively related to the development of human capital. This was found in the original testing in through regression. However, in the explorative statistics, our tests by using factor analysis have also found that auditors perceive business ethics and intellectual capital differently from what was expected from our literature review. The findings indicate that auditors perceive business ethics, not as managerial and professional ethics, but rather as internal and external ethics. Also, auditors do not perceive intellectual capital as three under-concepts; instead they tend to perceive what we refer to tacit individual capital and collective organizational capital.

Keywords: Business Ethics, Intellectual Capital, Managerial Ethics, Professional Ethics, Human Capital, Social Capital, Organizational capital, Audit firms, Auditors, Profession Theory, Upper-Echelon Theory, Behavioural Theory of the Firm, Internal Ethics, External Ethics, Tacit Individual Capital, Collective Organizational Capital.
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
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<tr>
<td>IC</td>
<td>Intellectual capital</td>
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<tr>
<td>HC</td>
<td>Human capital</td>
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<td>OC</td>
<td>Organizational capital</td>
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<td>SC</td>
<td>Social capital</td>
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<td>BE</td>
<td>Business ethics</td>
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<td>ME</td>
<td>Managerial ethics</td>
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<td>PE</td>
<td>Professional ethics</td>
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<td>SET</td>
<td>Social exchange theory</td>
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<td>BTF</td>
<td>The behavioural theory of the firm</td>
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<td>UET</td>
<td>Upper echelon theory</td>
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<td>PT</td>
<td>Profession theory</td>
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<td>TM</td>
<td>Top managers</td>
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1. Introduction

This chapter aims to introduce the reader to the topic and gives a basic understanding of the research problem. This chapter includes the following sections: background, problematization and outline.

1.1 Background

The organizational structure of businesses has undergone continuous development since the business form of cooperation was introduced on the market (Chiucchi, 2013; Giuliani, 2009). The focus has shifted from labour-intensive to knowledge-intensive activities (Hwan-Yann, 2014). Thus, intellectual capital (IC) has emerged as an important subject discussed in research and media alike (e.g. Petty & Guthrie, 2000; Guthrie, Ricceri, & Dumay, 2012; Chiucchi, 2013; Lönnqvist, Kianto & Sillanpää, 2009). IC is defined as the knowledge and the intellectual capacity required in order to creating values in the firm (Stewart, 1997). That is to say, resources and activities of the firms that is vital to achieve competitive advantages (Dean & Kretschmer, 2007; Kamukama, 2013; Lönnqvist et al. 2009). At the turn of the century US corporations spent 1.3 trillion dollars on IC, which is 1.2 times as much as the investment in tangible assets (Ordoñez de Pablos & Edvinsson, 2015). Furthermore, moral behaviours and business ethics has received an increasing degree of attention due to the scandals of globally renowned corporations (Hwan-Yann, 2014). For example, Swedish clothing manufacturer Hennes & Mauritz has been accused of child labour in their production lines (Aktiespararna, March 12th 2015), another Swedish company SCA has been using the company airplane for personal purposes (Balans, Feb 25th 2015) both of which has arguably damaged the public perception from society. The transformation into an information society where information travels faster (Chiucchi, 2013) combined with reports of questionable ethical behaviour and global scandals, has led to that both IC and business ethics have received greater attention (Hwan-Yann, 2014).

Furthermore, there are more examples of scandals where the business culture and the behaviour of the employees have caused negative impacts. A clear example is the scandal of Enron where the employees were driven by the culture to make unethical and dishonest actions (Amernic & Craig, 2004). Furthermore, the scandal of Enron was not solely directed towards the company, but also other responsible actors such as auditors. The auditing company of Enron, Arthur Andersen acted on the behalf of Enron in order to please its unethical values. Hence, they did not follow the ethical and moral codes that they were to
follow with respect to the profession of auditing (Amernic & Craig, 2004). This has led to, that the audit profession has been in the spotlight especially when it comes to the ethical behaviour, but also when it comes to the IC. This is because the industry appears to have a hard time keeping talent, while at the same time being extremely dependent on the competences of individuals within it (Broberg, Umans & Gerlofstig, 2013). Furthermore, the audit profession has been highlighted due to continuous scandals and questionable ethical behaviour, where the profession has endured criticism since the auditors are responsible of reviewing the financial statements (Low, Davey, & Hooper, 2008). The literature (e.g. Low et al., 2008; Amernic & Craig, 2004; Kung & Huang, 2013) argues that the auditing profession have a significant part in rebuilding an ethically sustainable business environment.

1.2 Problematization
IC has been conceptualized in previous research (Roos & Roos, 1997; Bjurklo & Kardemark, 2003) through three under-concepts being human capital (HC), organizational capital (OC) and social capital (SC). Firstly, HC represents the portion of IC that refers to competence, knowledge and experience that contribute to value creation in the organization (Giuliani, 2009; Roos & Roos, 1997; Petty & Guthrie, 2000). Secondly, OC represents the part of IC attributed to the utilities and tools that the company possesses, in order to create a competitive advantage (Giuliani, 2009), and thirdly, SC represents the part of the IC connected to value creation through, for instance; business relations with customers and suppliers. Thus, the HC and OC parts of IC are focused on the internal aspects of the firm and SC is focused on the external aspects of the firm. Furthermore, IC is important in most industries, but has strong impact in service industries where knowledge-intensity is high (Bontis, 1998), hence IC has a central part within the context of auditors as it is a service-oriented and knowledge-intense business. Therefore, understanding what elements that influence IC within the auditing context is of importance.

Different articles have shown that there are many elements that influence the development of IC, such as; education, recruitments, organizational structure and business ethics (e.g Hwan-Yann, 2014; Giuliani, 2009; Roos, Roos, Edvinsson & Dragonetti, 1998; Bjurklo & Kardemark, 2003). However, articles in the context of the audit profession appear less frequent (Guthrie et al. 2012). In the context of auditing firms, the last mentioned factor, business ethics (BE) may be a central element in order to develop IC. This is because auditing is a profession, and thus, auditors are considered to be trained and educated in the way of performing a unique set of skills, including; knowledge, expertise and BE (Broberg, 2013).
Furthermore, auditors as professionals are balancing public and private interests (Low et al., 2008), being a gatekeeper and at the same time a client advocate (Broberg, 2013). Hence, auditors take ethical stances in concerns to the interest of the clients as well as the society as a whole (Low et al., 2008; Kung & Huang, 2013). Thus, one can assume that BE is a central aspect in the auditing profession in the development of IC.

Hwan-Yann (2014) has in previous research established that the development of IC is influenced by BE. BE is a concept being defined as the ethical reflection of a business towards its behaviours and ethical stances and their impacts (Epstein, 1987). However, the concept of BE is not as simple as Hwan-Yann (2014) claim, the concept of BE may fit for one industry or context but not for another, especially where professionals are involved, such as auditors. What affect IC in general businesses may differ from the audit profession, since auditors usually do not have a BE aspect as a general model (Broberg, 2013). Instead auditors have managerial ethics, thus internal responsibilities, as for instance; taking care of employees and co-workers, as well as professional ethics with external responsibilities to clients and to the society as a whole (Öhman, Häckner, & Sörbom, 2012; Ruland & Lindblom, 1992). Hence, the previous research by Hwan-Yann (2014) has illustrated the concept of BE in a very broad and general model with a rather one-sided measurement of BE. Thus, one can assume that the one-sided concept of BE by the previous research by Hwan-Yann (2014) is an oversimplification.

This leads to the assumption that in the auditing context the development if IC is influenced by the managerial ethics as well as the professional ethics of auditors. On one hand, an assumption is that more internal-oriented ethical stances, thus in accordance with the managerial ethics, will develop the human and organizational parts of IC, since these are more internal in their nature. On the other hand, more external-oriented ethical stances, thus in accordance with the professional ethics, will develop the social aspect of IC since this is the more external part of IC. Following this, this study will explain how managerial and professional ethics of auditors affect the development of IC in audit firms. The research is made in order to fill the gap in previous research examining the relationship between BE and IC. This is because the previous research proves a lack of studies in the specific area (Hwan-Yann, 2014). Thus, this study fills the gap in the literature and as expanding the view of BE since the previous research by Hwan-Yann (2014) has illustrated the concept of BE in a very broad and general model with a rather one-sided measurement.
This lead to the research question of this dissertation, which is formulated as followed:

1.3 Research question

*How do managerial and professional ethics of auditors affect the development of intellectual capital in audit firms?*

![Figure 1. Research model](image)

1.4 Aim of the study

The aim of the study follows the research question hand in hand:

*The aim of the study is to explain how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms.*
1.5 Outline

1. Introduction

This chapter aims to introduce the reader to the topic and give a basic understanding to the problematization. This chapter includes the following sections: background, problematization, research question and purpose as well as outline of the dissertation.

2. Method

In this section the research philosophy, fundamental approach and structure are presented, followed by research methodology and adopted theory. The section ends with a summary.

3. Literature review

In this chapter a theoretical framework is presented. The theoretical framework is followed by a review of the literature within the area of study. The chapter includes the sections of: Theoretical framework, intellectual capital, business ethics as driver of the development of intellectual capital, Conceptualizing intellectual capital in terms of three dimensions and hypotheses summary.

4. Empirical method

In this chapter is the empirical method of the dissertations presented. First the research strategy and the literary search are displayed, secondly the population is presented and the data collection method explained. This is followed by the operationalization of the survey. The section ends with the presentation of how data analysis will be performed, the reliability and validity of the study and ethical considerations.

5. Analysis

In this section the outcomes of the survey are presented. First, the descriptive statistics of the respondents, and the dependent, independent and control variables are presented. Secondly, the hypothesis will be tested, followed by a correlation test and multiple linear regressions.

6. Conclusion

The conclusion chapter is the final part of the dissertation. The chapter include a summary of the dissertation together with reflections of the findings. This is followed by the contributions to the field and suggestions to future studies. This section ends with concluding comments.
2. Method

In this section the research philosophy, fundamental approach and structure are presented, followed by research methodology and adopted theory. The section ends with a summary.

2.1 Research philosophy and fundamental approach

A positivistic approach is emphasised in this study, explained by Patel and Davidson (2011) as knowledge building through general causal relations. Furthermore, positivism can only be used and acknowledged when knowledge already exists within the field of study, and thus, when there is fundamentally possible to rely on the consisting theoretical framework (Wisdom, 1945; Schultz & Tran, 2014). The previous research in the field of IC has been developed through a positivistic approach in order to create generalizable results (Guthrie et al., 2012). Hence, there is a pattern in previous research using a positivistic approach, this may explained through the fact that a hermeneutic approach is hard to conduct in order to develop results that can be generalized.

The aim of the study is to explain how managerial and professional ethics of auditors affect IC in audit firms, which aligns with the positivistic approach by using a theoretical framework in order to generalize and create new knowledge (Schultz & Tran, 2014). Had the study adopted a hermeneutic approach the result would not have been possible to generalize (Ibid). Instead, the hermeneutic approach considers all specific studies as unique and are therefore not considered to be generalizable (Ibid; Saunders, Lewis & Thornhill, 2009).

2.2 Research strategy

General theories and research derive the theoretical framework that we use to predict and explain potential causal effects. Therefore, this study follows a deductive way of reasoning. By doing this, this study follows a path of evidence (Patel & Davidsson, 2011). Deductive reasoning leads to conclusions about separate phenomena through the use of general theories (Ibid; Schultz & Tran, 2014). Furthermore, the theoretical framework provides a theoretical base that generates hypotheses which later are empirically tested. Through the use of empirical testing, generalised conclusions can be drawn when using a deductive reasoning (Saunders et al., 2009). This also aligns with the overlying aim of the study. However, the majority of the previous research focuses on developing a generalizable conceptualization of IC rather than exploring causal relations (Guthrie et al., 2012), see table 1 (research method). This may be explained through the scepticism against IC and its related theories and research
methodologies by highly rated generalist accounting journals (Guthrie et al., 2012). This is because these highly rated journals and their editors see the problem of IC as a financial accounting problem (e.g. (Schultz & Tran, 2014)Skinner, 2008), rather than understanding the relation between IC and value creation (e.g. Mouritsen, Larsen & Bukh, 2001).

Table 1. Research method (Based on Guthrie et al., 2012)

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<tr>
<th>Research method</th>
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<tbody>
<tr>
<td>No model proposed</td>
<td>280</td>
<td>66,2</td>
</tr>
<tr>
<td>Applies or considers previous models</td>
<td>50</td>
<td>11,8</td>
</tr>
<tr>
<td>Proposes a new model</td>
<td>93</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>423</td>
<td>100</td>
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The objectivity of the research is enhanced by using a deductive reasoning (Patel & Davidsson, 2011). This is because the hypotheses are derived through a general theoretical framework (Schultz & Tran, 2014). Thus, personal opinions in conclusions have less impact when using deductive reasoning.

2.3 Research method

There are two fundamental methodologies that a study empirically base on (Bjurwill, 2011). Firstly, the qualitative methodology is based on a narrow population in order to gain thorough knowledge in the specific field of study (Bryman & Bell, 2011). Secondly, quantitative methodology is based on a large-scale population with the purpose of developing comprehensive and generalizable understanding (Ibid; Schultz & Tran, 2014). The aim of the study is to explain how managerial and professional ethics of auditors affect the development of IC in audit firms. The research question demands comprehensive understanding in order to explore the relation between managerial and professional ethics of auditors and IC.

Adopting a general framework provides guidance and insights about all facts of the study (Creswell, 2014). This framework can consist of general philosophical ideas, but also previous research within the field of study (Schultz & Tran, 2014). IC has in a historical perspective been researched with a variety of methods (Guthrie et al., 2012), see table 2 (Research methods, based on Guthrie et al., 2012).
This may be explained through the fact that the concept of IC still is rather new in scientific research (Guthrie et al., 2012). Nonetheless, the aim of the study is to explain how managerial and professional ethics of auditors affect the development of IC in audit firms. Thus, aligned with Bryman and Bells (2011) description of the methodologies, this dissertation will adopt a quantitative research method in order to get the possibility to generalize and explain causal effects. Furthermore, Denscombe (2009) explains that in order to make conclusions in collected empirical data, one must confirm that the data is generalizable. The empirics become generalized through comparisons in a broader context (Ibid). One way of doing this is by comparing over time (longitudinal research) or by simultaneously comparing different cases (cross-sectional research) (Ibid; Schultz & Tran, 2014). In order to explain the aim of the study, how managerial and professional ethics of auditors affect the development of IC in audit firms, a cross-sectional research will be conducted in order to make the empirical data comparable over specific corporative borders, and in turn, generalizable (Ibid).

2.4 Choice of theoretical framework

When applying a comprehensive theoretical framework, Bryman and Bell (2011) pose that prior research should be reviewed. There is a variety of theories that can be used in order to examine IC and BE, thus there is no entirely agreed theoretical framework and perspective. Nonetheless, the theoretical framework should reflect the business model in order to generate a stable foundation for the literature review. The business model of this study is presented below in figure 2 (Choice of theoretical framework).
The profession theory is included in the theoretical framework in order to explain the context of the audit profession. Behavioural theory is included because the behaviour of the employees is a reflection of the business ethics of the firm. The Upper-echelon theory focuses on managers, due to the hybridity of the audit profession including a managerial role. The Upper-echelon theory may explain their actions as managers. Furthermore, social exchange theory is frequently referred to in previous research (e.g. Hwan-Yann, 2014; Choi & Wang, 2007; Worden, 2003). Social exchange theory is based on the assumption that interactions between parties provide benefits for both sides (Blau, 1964) and thus enhance the IC (Hwan-Yann, 2014).

### 2.5 Method summary

The aim of the study is to explain how managerial and professional ethics of auditors affect IC in audit firms. This study therefore is based on a fundamental positivistic philosophy with a deductive approach. As a result, an empirical quantitative method with a cross-sectional design was chosen. The theoretical framework provided in this study is in general based on social exchange theory, behavioural theory, upper-echelon theory and profession theory.
3. Literature review

In this chapter the literature review is presented. The chapter include the sections of: Theoretical framework, intellectual capital, business ethics, conceptualizing intellectual capital in terms of three dimensions and the chapter ends with a hypothesis summary.

3.1 Theoretical framework

This section aims to connect the theories with the research model and enhance the understanding of the concepts. This section includes the under sections of: Intellectual capital and the relation to social exchange theory, business ethics and the relation to behavioural theory of the firm and upper-echelon theory as well as the audit profession and relation to the theory of professions.

3.1.1 Intellectual capital and the relation to social exchange theory

Social exchange theory (SET) explains the fundamental processes of social behaviour, such as conformity, leadership and justice (Anderson & Narus, 1990). SET builds on the assumption that the emergent properties of social systems cannot be explained through an individual perspective only (Hwan-Yann, 2014), and therefore explain the element of trust in social exchanges between parties (Anderson and Narus, 1990). Trust reflects the pressure to reciprocate when one party voluntary provide benefits to the other party (Hwan-Yann, 2014). Thus, trust emerges as the party’s discharges the obligation through reciprocation or expanding their future exchanges gradually, evolving the relationships through demonstrating trustworthiness (Ibid). Hence, the social exchange between parties will build up trust and trustworthiness (Geyskens, Steenkamp & Kumar, 1998). This leads to that parties in a social exchange will subordinate short-term earnings in order to create a long-term relationship which will generate earnings in a long-term perspective (Hwan-Yann, 2014). The use of trustworthiness in social exchanges has integrity is a defining feature (Choi & Wang, 2007), which refers to the consistency between word and deed as well as to moral standards, such as fairness. Through endorsing ethical values such as integrity, businesses build an ethical and trustworthy environment (Hwan-Yann, 2014). Hence, the reciprocation and trust among parties leads to less need for monitoring social exchanges, reducing opportunistic behaviours, and thus facilitates social exchanges enhancing the IC.

3.1.2 Business ethics and the relation to behavioural theory and Upper-echelon theory

The Behavioural Theory of the Firm (BTF) is a composition of a number of theories (Chengwei, Maslach, Desai, & Madsen, 2015). However, the general base of BTF explains
how decisions, actions and behaviours of firms and contribute to value added and outcomes (Levinthal, Gavetti, Ocasio, & Greve, 2012). Broberg, Umans, Skog & Theodorsson (2014) pose that organisations are reflections of decisions made by the individuals of the firm, and thus, in line with the BTF. Business ethics (BE) has been defined as the ethical reflection of a business towards its behaviours and their impacts (Epstein, 1987). Furthermore, BE is related with the behaviour and actions of the employees and therefore connected to BTF (Hambrick & Finkelstein, 1987; Low et al., 2008). Previous research by Augier and Prietula (2007) illustrates concepts related to BTF as competences, capabilities, knowledge, motivation and ethics. Hence, the BTF is used as a theoretical lens in order to explain the concept of BE and how it may influence IC.

The Upper Echelon Theory (UET) has been defined by the previous research by Hambrick and Mason (1984) as a theory that states that strategic choices are determined by the values of dominant actors of the organization, such as top managers (TM). The central base of UET is that TM bases their decisions, behaviours and actions according to their own personalized lenses (Awa, Eze, Urieto, & Iyang, 2015). Furthermore, these personalized lenses are a construct of the individual experiences and other personal factors that have an effect on organisational outcomes (Timurs, 2012). Thus, according to the UET, organizations become reflections of its TM (Awa et al., 2015). Auditors, on all business levels may be argued to be managers (Broberg, 2013), where there is an operating core representing the professionals in the firm that compliantly have influences on the strategy of the firm and thus on its organizational outcomes (Mintzberg, 1980). Hence the behaviours and ethical values of all consisting auditors in a firm may be explained through the theoretical lens of UET. Through examining the ethical stances of auditors and how they relate to organizational outcomes will generate a further understanding of how BE is related to the development of IC.

3.1.3 The audit profession and relation to the profession theory

Profession Theory (PT) provides an analytical lens which facilitates the understanding of characteristics, attributes and structure of professionals (Brante, 1988). This study is done in the audit context, auditors are perceived as performing the profession of auditing (Broberg, 2013). Brante (1988) illustrated the professional man as “The professional man […] does not work in order to be paid, he is paid in order that he may work. Every decision he takes in the course of his career is based on his sense of what is right, not his of what is profitable.” (Marchall, in Brante, 1988, p.119). This quote says that as a professional, one serves in public interest (Broberg, 2013). Professionals are controlled by professionals, meaning that in order
to regulate or control the profession, you need to be a part of the profession (Friedson, 2001). Thus, a profession has achieved a jurisdictional autonomy where rules and behaviour are learned through training and supervision (Broberg, 2013). PT is used in this study to explain the contextual framework, hence the characteristics, attributes and structure of the auditing profession.

3.2 Intellectual capital
IC has occurred as a concept in research since the 1990s (Petty and Guthrie, 2000; Arenas & Lavanderos, 2008). The concept of IC refers to all knowledge resources (Grant, 1996), which in this study is understood as a broad concept referring to knowledge and capabilities (Nonaka & Peltokorpi, 2006) to emphasise the actions of individuals and organisations to achieve their goals. Furthermore, individuals develop tacit knowledge, which is knowledge that is individualised and hard to codify. Tacit knowledge is specific and individualised compared with explicit knowledge that can be codified and communicated (Hwan-Yann, 2014). Firms have an important and central role in order to integrate the individual knowledge into the businesses (Nonaka & Peltokorpi, 2006). In line with SET, this integration of individual knowledge may be done through continual interactions between the firms and the individuals by the means of a combination of socialisation, externalisation and internalisation (Nonaka & Peltokorpi, 2006). This means that individual knowledge can be amplified and integrated into organisational knowledge and vice versa (Hwan-Yann, 2014). Thus, IC refers to the sum of all intangible knowledge resources, including the sum of all individual and organisational knowledge that a firm can utilise for competitive advantage (Kang & Snell, 2009; Hwan-Yann, 2014).

Hwan-Yann (2014) has studied the relation BE ethics and IC. The article by Hwan-Yann (2014) primarily studied how BE in general influenced IC. Yet, there is still a need for both elaborating the view of BE since in some contexts, especially where there exists a duality in roles, as for instance in audit firms. Without lessening the importance of previous research, this paper underline the importance of a better understanding of the drivers of IC and accentuate a need for a reconceptualization of business ethics. Thus, the next section presents potential drivers of IC in audit firms.

3.3 Business ethics as driver of the development of intellectual capital
Auditing research is often concentrated on either the individual auditor or the organizational level of analysis. Broberg et al. (2014) pose in line with the BTF that organisations are
reflections of decisions made by the individuals of the firm. The decisions are made with different ethical perspectives depending on the identity of the decision-maker (Ibid). Prat and Foreman, (2000) argue that these identities are constructed in interaction of external and internal forces represented by the profession and the organisation respectively. The previous research by Hwan-Yann (2014) shows a positive relation between BE and IC. However, in the context of the audit profession, the concept of BE is separated into managerial ethics and professional ethics where the roles may have different influence on developing IC, see figure 3 (Conceptual framework).

![Conceptual framework](image)

The conceptual framework is derived from the theoretical framework presented above. Behaviours and ethical stances incorporate both subjective and objective perspectives on the organizational environment (Child, 1997). This duality reflects the critical link between the environmental forces and organizational actions. Furthermore, the duality is particularly true in service sectors and where the knowledge intensity is high such as professions (Child, 1997). This is because individuals in professions share their thoughts and harmonize their preferences in accordance with the institution they build (Ibid). The duality of ethical stances of auditors reflects hybrid roles as managers and professionals (Broberg, 2013). The professional role refers to the influence of the profession, hence an external perspective, being a gatekeeper acting in the public interest (Ruland & Lindblom, 1992) and the managerial role reflects an internal perspective; being a client-advocate acting as a manager according with the ethical business rules of the firm (Öhman et al., 2012). Moreover, according to BTF, decisions, ethical stances and behaviours of managers has influence on business outcomes contributing to value added (Levinthal et al., 2012). With that said, we argue that the duality of auditors with professional ethics and managerial ethics have different influence on the development of IC.
Before introducing the managerial and professional ethics and its influence of IC, the previous studies on the concept of BE must be reviewed. The previous research show a variation of tools used to measure ethical decision-making (Casali, 2011), where “the majority of the instruments used are not based on moral theories or do not recognise the non-mutual exclusiveness of moral theories” (Sylvander, 2015, p. 3). This makes the instruments imprecise tools for capturing the complexity of managerial BE (Ibid). Thus, Sylvander (2015) developed a multidimensional instrument to measure the influence of different moral philosophical dimensions in auditors’ managerial decision-making process. The multidimensional instrument combines the four major schools of moral philosophy, which are ethical egoism, utilitarianism, virtue ethics and deontology (Ibid). However, this study aims to explain how managerial and professional ethics of auditors affect the development of IC in audit firms. This leads to, that only the part in the measure instrument by Sylvander (2015) related to duties are used, hence deontology.

According to Alonso (1996) “when referring to the professions, ‘ethics’ and ‘deontology’ are two words which are often used interchangeably” (p. 201). Furthermore, deontology is a good way to explain how professionals ought to behave within their professional practices (Ibid). Moreover, deontology moves in the realm of that which is approved by the professional authorities (Ibid). However, Sylvander (2015) show that the aspect of deontology in the context of auditors reflect other moral philosophies as well, where auditors seem to perceive duty as a wider concept consisting of more than just the moral school of deontology. Hence, in this study deontology is considered a multidimensional concept. Nonetheless, deontology focus on duties and is in general a non-consequentialist moral theory (Poon & Hoxley, 2010). Furthermore, the duties “stem from our human capacities of autonomy and reason; where to act out of duty is to follow one’s free will, not orders or commands” (Sylvander, 2015, p. 12). In the following sections, the managerial and professional ethics of auditors and its influence on IC will be explained through the concept of deontology as a multidimensional concept.

3.3.1 Managerial ethics as driver of the development of Intellectual capital
As mentioned before the managerial ethics of auditors can be explained through deontology, since a manager applies duties to adhere to (Barlaup, Drøner & Stuart, 2009), in order to decide what is right or wrong. However, in the context of auditors the managerial duties reflect moral philosophies, such as reputational egoism and rule utilitarianism (Sylvander, 2015). Thus, managerial ethics for auditors are presented as a multidimensional concept.
Nonetheless, managerial ethics as a general concept reflect an internal perspective, thus auditors that base their ethical choices on managerial ethics emphasises the organisation, where the individual experiences a shared identity with an organisation and its norms (Broberg et al. 2013). This is apparent when decisions are made instinctively and intuitionally based on the best interest of the firm and what the firm wants (Broberg, 2013). This is in line with Hambrick and Mason (1984) who state in UET that managers make strategic choices based upon their values, cognitions, perspectives and organisational activities or outcomes reflecting the collective cognitive biases and abilities of the managers.

Sylvander (2015) shows that in the auditing context managerial decisions vary from case to case since every particular situation is unique. Thus, in accordance with the managerial ethics, auditors would place importance on ensuring that the everyday work is performed in an efficient way, focusing on the context where the decision is made (Barlaup et al. 2009) and in accordance with the norms of the firm (Sylvander, 2015). Furthermore, Sylvander (2015) show that ethics of care is strongly connected to managerial duties in the auditing context. This is because it is of importance to analyse and comprehend the situation and the people involved to ensure that the right things are done, maintaining a fair process and due care (Casali, 2011), thus not harming clients, third parties or other stakeholders (Sylvander, 2015). Furthermore, in line with ethical egoism, auditors as managers perceive their managerial duties as to protect the reputation of the bureau as well as protecting the reputation of the profession and to follow the bureau’s rules and regulations (Sylvander, 2015).

This lead to, that in the context of auditors the managerial ethics emphasise the internal aspects of the organisation, ensuring that the right thing is done in the interest of the firm. Thus, according to Sylvander (2015), auditors that base their ethical stances on their role as managers perceive the following factor to be more important:

- Not harming third parties.
- Not harming the clients.
- Protecting the bureau’s reputation.
- Respecting the bureau’s rules and regulations that have been created to add value for all stakeholders.
- Protecting the reputation of the profession.
3.3.2 Professional ethics as driver of the development intellectual capital

In the context of audit firms where the auditors are seen as professionals (Broberg, 2013), ethics means that the professionals feel duties owed to the public, to each other, and to themselves in regard to the exercise of their profession (Mason, 2008). This can also be interpreted as Poon and Hoxley (2010) state as: doing the right thing for the public interest. This means that the professional ethics of auditors can be explained through deontology since auditors have professional duties to adhere to. However, in the context of auditors the professional duties reflect moral philosophies, such as rule deontology and utilitarianism as well as virtue ethics (of self) (Sylvander, 2015). Thus, professional ethics for auditors are presented as a multidimensional concept.

Professional ethics reflects the ethical codes of the profession and can be seen as the manifestation of the professional duties that should be followed at all times (Sylvander, 2015; Preuss, 1998). Freidson (2001) has explained the professionalism in previous research as to perceive a duty, thus adhere strictly to professional rules. With that said, professional ethics has an external perspective in accordance with the ethical codes of the profession to exercise duties in public interest. The following citation show professional auditors are regulated by the professional rules of the IESBA (2015): “[a] distinguishing mark of the accountancy profession is its acceptance of the responsibility to act in the public interest” (p. 11). Besides IESBA’s regulations, the auditing profession also has other rules and regulations to follow, for instance corporate laws in each country where the firms are active (Sylvander, 2015). The fundamental idea regarding laws is that they are made to mutually protect individuals, companies, democracy and civil rights (Ibid). Therefore, auditors as managers applying professional ethics in their ethical choices would place importance on following the ethical codes of the profession, ensuring confidentiality as well as maintaining a fairness in their social exchanges with stakeholders and the society as a whole (Casali, 2011).

This lead to, that in the context of auditors the professional ethics emphasise the external aspects of the organisation, ensuring that the ethical codes of the profession is followed. Thus, according to Sylvander (2015), auditors that base their ethical stances on their professional role perceive the following factor to be more important:

- Ensuring that confidentiality is maintained at all times.
- Ensuring that the Ethical Codes of the profession are maintained at all times.
- Obeying the law, since it is created to benefit society as a whole.
• Ensuring that trustworthiness is maintained.

It might have been natural to assume that the set of hypotheses with more pointed arguments of the two ethical stances’ influence could have been drawn here. However, this will not be the case since the major issue remains: What constitutes IC? This paper thus continues by presenting three distinct aspects of the IC of audit firms. We then conclude this section by presenting arguments for our hypotheses.

3.4 Conceptualizing intellectual capital in terms of three dimensions

In general, IC has been conceptualized in many different ways including a variety of different under-concepts, as well as definitions (Petty & Guthrie, 2000). However, this study is based on the conceptualization by Youndt and Snell (2004) including three under-concepts being: human capital, organizational capital and social capital. This study adopts a quantitative empirical method with a questionnaire as base, thus a well-developed IC model is to prefer; hence the model proposed by Youndt and Snell (2004) and further developed by Hwan-Yann (2014) is used in this study. Thus, the concept of IC includes the under-concepts of: social, organisational and human capital, in order to provide a holistic view, see figure 4.

![Diagram of Intellectual Capital](image)

*Figure 4. Intellectual capital. (Based on Hwan-Yann, 2014; Youndt & Snell, 2004)*

3.4.1 The influence of professional ethics and managerial ethics on the development of organizational capital

Organizational capital (OC) represents the portion of the IC attributed to the utility that the company possesses which purpose is to create value (Giuliani, 2009). It may for example include different systems that create a competitive advantage (Roos *et al.*, 1998). Thus, OC represents the social integration system that ties together the business skills to create value in the firm (Alguezaui & Filieri, 2010). OC creates opportunities for knowledge exchange and development of new knowledge, which generates an entrepreneurial climate in which employees can act innovatively (Henderson & Clark, 1990). Nahapiet and Ghoshal (1998) defines OC as follows "The organizational dimension of OC reflects the patterns of the social ties characterising a group of actors, it concerns the properties of the social system and the
“network of relations as a whole” (p. 244). Previous research identifies several elements that explain the social integration system that consists of OC (Giuliani, 2009). Thus, OC in this study refers to internal aspects of IC reflecting values such as information, distribution and production systems (Alguezaui, 2014) as well as, governance, patents, trademarks, research and culture (Giuliani, 2009; Alguezaui & Filieri, 2010; Henderson & Clark, 1990).

We argue that OC is driven differently by the ethical choices of auditors as managers and professionals. Professional ethics represent an external focus, where auditors follow the ethical codes of the profession (Broberg, 2013) focusing on confidentiality as well as maintaining a fairness in their social exchanges (Sylvander, 2015). Moreover, professional ethics emphasise solidarity and trust in social engagement (Alguezaui & Filieri, 2010). Furthermore, providing benefits for the broader aggregate, rather than the specific client or private property. Thus, auditors who base their ethical choices on professional ethics will be less inclined to develop OC, since professional ethics has an external perspective focusing on social exchanges, rather than the social integration system that ties together the business skills to create value in the firm.

On the other hand, Managerial ethics represents an internal focus where managers emphasise the organisation and its norms (Mael & Ashforth, 1992; Broberg et al. 2012). It has been claimed that auditing has always included business aspects, thus a profit orientation striving for efficiency (Broberg et al., 2013), but such aspects have gained greater importance due to the prevailing commercialization of the profession, requiring a need to manage audit more as a business activity (Broberg, et al. 2014). Previous research by Broberg (2013) indicates a so called firmalization in which the auditors are strongly influenced by the audit firm, thus a feeling of comfort and of belongingness of the systems in the everyday work. This is because, as stated earlier, of importance to understand the unique situation and the people involved in order to ensure that the right thing is done (Sylvander, 2015), maintaining a fair process and due care (Casali, 2011), thus not harming clients, third parties or other stakeholders (Sylvander, 2015). Furthermore, to protect the reputation of the bureau as well as protecting the reputation of the profession and to follow the bureau’s rules and regulations seem to be perceived as managerial duties for auditors (Ibid). Thus we argue that OC is driven by managerial ethics, since it has an internal focus on developing the social integration system to create value in the firm. Thus we hypothesis:
Hypothesis 1: A stronger reliance on managerial ethics in decision-making is positively related to the development of organizational capital.

Hypothesis 2: A stronger reliance on professional ethics in decision-making is not related to the development of organizational capital.

3.4.2 The influence of professional ethics and managerial ethics on the development of human capital

Previous research presents human capital (HC) based on individual-based value creation (Coff & Kryscynski, 2011; Ployhart et al. 2014). HC represents the portion of IC that refers to employee competence, knowledge and experience that contribute to value creation in the processes (Giuliani, 2009; Roos et al., 1997; Petty and Guthrie, 2000). Ployhart et al. (2014) illustrate HC as "a unit-level resource that is created from the emergence of individuals' Knowledge, Skills, Abilities and Other characteristics (KSAOs)" (Ployhart et al. 2014 p.375). These KSAOs have been further broken down into elements that bring value into to the processes of the firm. Thus, HC in this study refers to internal aspects of IC reflecting values such as; entrepreneurship, education, decision-making (Giuliani, 2009) potential, knowledge (Ployhart et al. 2014). Therefore, HC emphasise the knowledge, skills and abilities of employees.

We argue that HC is driven differently by the ethical choices of auditors as managers and professionals. In similarity to the argument how professional ethics does not drive the development of OC, we argue that auditors that base their ethical stances on professional ethics would not influence the development of HC. This is because professional ethics has an external focus towards; independence requirements and ethical standards, representing the traditional values upon which the profession is built (Sylvander, 2015). Thus, ethical stances and actions that adhere to what is ethically correct according to the profession (Ibid).

However, auditing managers who applies managerial ethics has an internal focus where managers emphasises the organisation and its norms (Mael & Ashforth, 1992; Broberg et al. 2012). In addition, the globalization of the audit profession and the prevailing commercialization has forced many audit firms to diversify their services in order to be competitive (Broberg et al. 2014) and this increase the importance of managerial duties. These new services contribute to a more intense approach towards customers in order to fulfil their demands and expectations (Broberg et al. 2014). Therefore, auditors who base their ethical choices on managerial ethics would place importance on developing the employees’
knowledge (Ployhart et al, 2014) and an entrepreneurial environment, in order to meet the demands and expectations from the clients, third parties and other stakeholders. The learnt knowledge and skills makes the employees to adapt and respect the bureau’s rules and regulations that have been created to add value for all stakeholders (Sylvander, 2015). Furthermore, auditors that base their ethical choices on managerial ethics protect the bureau’s reputation as well as the profession as a whole and the employees become more efficient. Thus we argue that HC is driven by managerial ethics, since it has an internal focus on developing the knowledge, skills and abilities of the employees. Thus we hypothesis:

**Hypothesis 3:** A stronger reliance on managerial ethics in decision-making is positively related to the development of human capital.

**Hypothesis 4:** A stronger reliance on professional ethics in decision-making is not related to the development of human capital.

### 3.4.3 The influence of professional ethics and managerial ethics on the development of social capital

Social capital (SC) represents the part of the IC that refers to value creation through business relations (Giuliani, 2009). It could relate to business networks or individual contacts that generate a value creation in the firm (Roos et al, 1998). Welbourne and Pardo del Val (2008) defines social capital as "the set of all relationships - market relationships, power relationships and cooperation established between firms, institutions and people that stem from a strong sense of belonging and a highly underdeveloped capacity of cooperation typical of culturally similar people and institutions" (p. 486). Furthermore, previous research (Deegan & Unerman, 2006; Guthrie, Petty & Ricceri, 2006) argue that stakeholders have a high influence on firm performance, regardless of their direct influence and impact on the businesses. The stakeholders should be treated fairly and businesses have the duty to inform them when business behaviours and performance affect intellectual assets, society and environment (Hwan-Yann, 2014).

There is a trend that firms increasingly tend to develop their business networks and relations in order to ensure that the skills required to create value in the processes always are at hand (Adler & Kwon, 2002; Moran, 2005). According to the SET, social exchanges between the parties will build up trust and trustworthiness (Geyskens et al., 1998; Anderson and Narus, 1990). This is because it is not effective if every single firm possess all the skills internally. Instead, by cooperating and exchanging knowledge and competence firms may enhance the
conditions to generate a higher value (Burt, 2000). Moran (2005) argue that it is not the employees themselves that creates value in the processes, but it is the network, and moreover the competences that the employees have access to in order to create competitive advantages. Thus, SC in this study refers to external aspects of IC reflecting knowledge resources embedded within, available through, and utilised by interactions among employees and their networks of interrelationships (Youndt et al. 2004; Hwan-Yann, 2014).

We argue that SC is driven differently by the ethical choices of auditors as managers and professionals. Managerial ethics represent an internal focus where managers emphasises the organisation and its norms (Mael & Ashforth, 1992; Broberg et al., 2012). Thus, auditors guided by managerial ethics would place importance on ensuring that the everyday work is performed in an efficient in accordance with the norms of the firm (Sylvander, 2015). Thus, auditors that base their ethical choices on managerial ethics would not harm clients or third parties, but they would see their social exchanges as business relations rather than striving towards social benefits for the society as a whole, which is in accordance with the professional ethics. Hence, auditors that base their ethical choices on managerial ethics would place importance on the efficiency of the firm and not focus on maintaining fairness and long-term trustworthiness in their social exchanges. Therefore, one may argue that auditors guided by managerial ethics would not develop SC.

Professional ethics represent an external focus, where auditors follow the ethical codes of the profession (Broberg, 2013) focusing on confidentiality as well as maintaining a fairness in their social exchanges (Sylvander, 2015). Audit firms have seen the need to compete for customers and recognize the importance of a customer-oriented approach to attracting and retaining them. Recent research findings have also indicated that through their auditing work, auditors spend most of their time on communication with the clients (Broberg, 2013). The professional ethics is argued to collectively protect individuals, companies, democracy and civil rights (Sylvander, 2015). Thus, auditors that base their ethical stance on professional ethics would place importance on maintaining fairness in their social exchanges with stakeholders such as clients as well as the society as a whole (Casali, 2011), as well as ensuring that laws as well as ethical codes of the profession are maintained at all times. Thus, according to SET trustworthiness and fairness in social exchanges will build up long-term relationships which will generate earnings in a long-term perspective, hence build of SC. Thus we argue that SC is driven by professional ethics, since it has an external focus on
maintaining fairness in their social exchanges and ensuring that laws as well as ethical codes of the profession are maintained. Thus we hypothesis:

_Hypothesis 5: A stronger reliance on managerial ethics in decision-making is not related to the development of social capital._

_Hypothesis 6: A stronger reliance on professional ethics in decision-making is positively related to the development of social capital._

### 3.5 Hypotheses summary

In the following table (Table 3. Hypotheses summary) hypotheses of the study are illustrated and summarized.

<table>
<thead>
<tr>
<th>Intellectual capital</th>
<th>Hypotheses</th>
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<tbody>
<tr>
<td><strong>Organizational capital</strong></td>
<td><em>Hypothesis 1:</em> A stronger reliance on managerial ethics in decision-making is positively related to the development of organizational capital.</td>
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<tr>
<td></td>
<td><em>Hypothesis 2:</em> A stronger reliance on professional ethics in decision-making is not related to the development of organizational capital</td>
</tr>
<tr>
<td><strong>Human capital</strong></td>
<td><em>Hypothesis 3:</em> A stronger reliance on managerial ethics in decision-making is positively related to the development of human capital.</td>
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<td></td>
<td><em>Hypothesis 4:</em> A stronger reliance on professional ethics in decision-making is not related to the development of human capital.</td>
</tr>
<tr>
<td><strong>Social capital</strong></td>
<td><em>Hypothesis 5:</em> A stronger reliance on managerial ethics in decision-making is not related to the development of social capital.</td>
</tr>
<tr>
<td></td>
<td><em>Hypothesis 6:</em> A stronger reliance on professional ethics in decision-making is positively related to the development of social capital.</td>
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4. Empirical method

In this chapter the empirical method of the dissertations is presented. First the research strategy and the literary search are displayed, secondly the population is presented and the data collection method explained. This is followed by the operationalization of the dependent, independent and control variables. The chapter ends with the presentation of how data analysis will be performed and the reliability and validity of the study.

4.1 Literary search and review

One of the first steps in the research process starts with a comprehensive literary search in order to investigate the field of study. In the literary search we mainly used SummonHKR and LUBsearch, provided by Kristianstad and Lund universities respectively. The keywords and phrases used in the literary search were; IC, human capital, organizational capital, social capital, business ethics, auditing profession and behavioural ethics. The key terms and phrases were chosen in order to fulfil the aim of the study which is to explain how managerial and professional ethics of auditors affect the development of IC in audit firms.

The search for scientific articles within the focused research field resulted in the finding of an article named: Business ethics and the development of intellectual capital by Hwan-Yann (2014). This article offered a useful framework in order to structure this dissertation, since the article presents the same type of study, using a quantitative research method. Furthermore, the search for scientific articles resulted in the finding of two review articles named: Reflections and projections: A decade of intellectual capital accounting by Guthrie, Ricceri and Dumay (2012) and Intellectual capital literature review by Petty and Guthrie (2000). These two articles offered a review of the research done in the field of IC, furthermore what is lacking in previous research and what journals to search for. Moreover, to be able to measure BE, Sylvander (2015) has developed a scale which we were inspired from. To feel comfort of using the found scientific articles, the journals were critically judged and overviewed objectively. To structure this thesis in a scientific manner, also articles related to the theoretical framework, methodology and research philosophy literature has been gathered and overviewed.

4.2 Methodology

There are two fundamental methodologies that a study empirically base on (Bjurwill, 2011). Firstly, the qualitative methodology is based on a narrow population in order to gain thorough
knowledge in the specific field of study (Bryman & Bell, 2011). Secondly, quantitative methodology is based on a large-scale population with the purpose of developing comprehensive and generalizable understanding (Ibid; Schultz & Tran, 2014). The aim of the study is to explain how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms. The research question demands comprehensive understanding in order to examine how the business ethic of auditing managers affects the IC.

As stated before, it is of interest to gather a general framework providing guidance about all facts of the study (Creswell, 2014). Historically, IC has been researched with quantitative research methods (see Guthrie et al., 2012 for a review). Thus, with emphasis on Bryman and Bells (2011) description of methodology and previous articles using quantitative research method, this dissertation will follow the same path in order to draw generalized conclusions and explain causality.

We must however ensure that the data is generalizable (Denscombe, 2009). According to Denscombe (2009) this can be done through comparisons in a broader context, for example in comparisons over time (longitudinal research) or in a simultaneous comparison over different cases (cross-sectional research) (Schultz & Tran, 2014). The aim of the study is to examine how the business ethics of auditing managers affects the development of IC in audit firms. Therefore, a cross-sectional research is conducted in order to make empirical data comparable over specific corporative borders, and in turn, generalizable (Ibid).

4.3 Population

The concept of IC is highly important in service oriented businesses (Petty & Guthrie, 2000; Guthrie et al., 2012; Chiucchi, 2013; Lönnqvist et al., 2009). This is because service-oriented businesses rely to a high extent on their knowledge and experience that are embedded in their firms (Lönnqvist et al. 2009). Thus, IC is important in the audit profession as being a service oriented business. Furthermore, this study is conducted on the context of Swedish auditors and thus the findings are restricted to the specific geographical area of Sweden.

The questionnaire was sent out to Swedish authorised auditors, members of Revisornsämnden i.e. the Supervisory Board of Public Accountants in Sweden. In March 2014, they had 3 137 authorised auditors registered. From their register email addresses were gathered and in some cases email addresses were obtained from the company websites if they were given access to. This leads to a total of 3066 email addresses. This list has been used in previous research and
has proved to generate a good sample of the population. The questionnaire was sent with the web based survey solution, SurveyMonkey.

4.4 Data collection method

To collect empirical primary data a questionnaire was formed and made with a cross-sectional design. The questionnaire, formed as a survey, is distributed through the web based survey solution SurveyMonkey. Through this online service, the survey was distributed to all 3066 email addresses. However, since this study is limited to Sweden, the questionnaire was sent out in Swedish (Appendix 1). The translated version into English can be seen in appendix 2. Using Internet as a distribution channel can however be a limitation according to Bryman and Bell (2011). Email addresses might be invalid or might not lead directly to the intended respondent, leading to a risk where the respondent fails to receive the questionnaire. A reminder is sent out a few days later to gather as many answers as possible.

4.5 Operationalization of the survey

The term operationalization refers to the process where the researchers convert their concepts into measures (Bryman & Bell, 2011; Schultz & Tran, 2014). The main purpose with the operationalization is to produce measures that can be indicators explaining the research question in focus (Ibid; Saunders et al., 2009). The hypotheses are conducted in the literature review chapter and work as a base when formulating measures. These make the indications valid to explore how managerial and professional ethics of auditors affect the development of IC in audit firms. The questionnaire in this study includes 28 questions. The first six questions concerns the control variables and obtaining background information of the firms. The following 22 questions are directed towards the independent variables and the dependent variables. The questions towards the independent and dependent variables are constructed with a Likert-scale, which means that the respondents have a scale. This scale contains ten levels, where the higher levels refer to an agreement and the lower levels refers to a disagreement. The answers with the values of 1-5 address a low agreement with the question. Furthermore, answers with the values of 6-10 address a high agreement with the question.

4.5.1 Dependent variable

IC has been measured by many different instrument and measures in previous research (see Bontis, 2001 and Rodríguez-Ruiz, 2009 for reviews). The definition constitute that IC combine all the intangible assets that can be used to generate knowledge-based value in the organisation (Guthrie et al., 2012). Furthermore, IC is often conceptualized through three
under-concepts being HC, SC and OC (Ibid), which is in line with Skandia’s Navigator model that pioneered the market (Roos et al., 2008). However, the concept of IC has been criticised for being an imprecise concept illustrating an imaginary picture of capital, hence not providing accountable information to the stakeholders. An example of the criticism is the Swedish insurance company Skandia, where Leif Edvinsson, corporate director of IC at in the early 90’s, was the key pioneer and contributor to the practice of IC. Edvinsson and Malone (1997) argued that a lot of corporations were under-valued, because one should reflect the invisible capital as the knowledge and experience of the employees when measuring the value of corporations. This point of view, led to that Skandia in 1995 were the first corporation to base their balance sheet on IC reporting (Edvinsson & Malone, 1997). In the following years, due to the financial crisis, the stock value of Skandia reached pure bottom, and the employees started to question whether their knowledge and experience had disappeared over a night and criticisms of the concept of IC began to spread (Rognerud, 2003).

Sveiby (1997) discuss the criticisms of IC and argues that the IC concept is like a spring of water, the surface is clear, yet the pond is so dark. By this metaphor Sveiby (1997) show that the IC itself may be very clear and easy to point out, yet the development and building of IC is dark as the bottom of a pond. Therefore, in order make clearness and intelligibility of the IC concept Tarride and Osorio-Vega (2013) point out that the complex principles has to be explained and the inseparable categories has to be separated and distinguished in under-concepts. Therefore, in order make clearness and intelligibility of the conceptualization we need to identify measures that separate the under-concepts of HC, SC and OC from each other and focus on a reflexive meta-point of view including a spectrum of logical operations that can come out of the respondent’s mind (i.e. emotions, intuitions, values and feelings) (Tarride & Osorio-Vega, 2013). This study measures IC through a measurement constructed by Youndt et al., (2004) that later on was further developed by Hwan-Yann (2014). The measurement clearly distinguishes the under-concepts of HC, SC and OC from each other. Furthermore, the measurement of this study contains a ten point scale in order to capture a reflexive meta-point of view, giving room for the respondents to express their feelings and emotions. Below are the measurement illustrated in means of the under-concepts of OC, HC and SC.

4.5.1.1 Organizational Capital
The measures for OC were adopted from a study by Hwan-Yann (2014) whom further developed the scales construct Youndt et al., (2004) to measure organizational capital. A total
of three statements were adapted from previously mentioned measure. However, these statements were slightly changed and adjusted to match our study and to be suitable for the audit profession. Our statements seek to gain information about the collective knowledge that are developed from the use of manuals, databases etc. Also, the audit profession is known for its strict hierarchic organizational structure (Broberg, 2013), and therefore, we also want to investigate if this is developed by the individuals of the firm themselves. Lastly, organizational capital is constructed by structures, systems and processes, which we intend to support by the third statement. Therefore, OC is measured through the following statements:

- Our organization's collective knowledge is continuously developed through the use of internal information such as manuals, databases, etc.
- Our organization develops an organizational culture that contributes to the firm’s value creation by creating valuable ideas, unique business processes, etc.
- Our organization is continuously developing its knowledge and information through structures, systems and processes.

4.5.1.2 Human Capital
The measures for HC were adopted from a study by Hwann-Yann (2014) whom further developed the scales construct Youndt et al., (2004) to measure human capital. A total of five statements were adapted from previously mentioned measure. Also here, the statements were slightly changed to match our study and to be suitable for the audit profession. In audit context, the knowledge, skills and abilities of the employees are important. Therefore, HC is measured through the following statements:

- Our employees continuously develop cooperation within the firm by exchanging ideas, share information and learn things from each other
- Our employees continuously develop their knowledge in order to be qualified for their tasks
- Our employees continuously develop their knowledge to be experts in their specific work and function.
- Our employees continuously develop their creativity to create smart solutions.
- Our employees are continuously developing new abilities and skills.

4.5.1.3 Social Capital
The measures for SC were adopted from a study by Hwan-Yann (2014) whom further developed the scales construct Youndt et al., (2004) to measure social capital. A total of four statements were adapted from previously mentioned measure. The statements were slightly changed to match our study and to be suitable for the audit profession. The social capital
represents the external focus of IC. For the auditing context this includes external collaborations, professional networks and long-term relationships. The importance of social exchanges is crucial for the development of IC. As Burt (2000) explains; it is not effective if every single firm possess all the skills internally, by cooperating and exchanging knowledge and competence firms may enhance the conditions to generate a higher value. Thus, SC is measured through the following statements:

- The firm continuously develops various external collaborations to enhance the problem solving ability of the employees.
- The firm continuously develops and improves professional networks.
- The firm actively shares information and knowledge with external partners and learn from others.
- The firm continuously develops relationships with their clients to create long-term value.

4.5.2 Independent variables
There is a variation of tools previously used to measure ethical decision-making (Sylvander, 2015), such as The Defining Issues Test and Managerial Judgement to name a few (Casali, 2011). Nonetheless, all of the measurements above are considered as one-dimensional concepts and thus do not consider all of the four major schools of moral philosophy, namely ethical egoism, utilitarianism, virtue ethics and deontology (Sylvander, 2015). Therefore, Casali (2011) decided to develop a multidimensional scale to try to capture a more realistic view of moral reasoning in managerial decision-making. Furthermore, the audit profession faces a duality were they have to consider both professional ethics and managerial ethics. Thus, ethical choices of auditors seem to require ethical reasoning from a multidimensional perspective (Sylvander, 2015). Therefore, Sylvander (2015) decided to develop a measure based on Casali (2011) that measures to what extent different moral philosophical dimensions influence auditors’ decision-making in their managerial role. Thus, this study use a measure developed by Sylvander (2015) based on Casali (2011). Hence, the independent variables of managerial ethics and professional ethics operationalized as follow:

4.5.2.1 Professional ethics
The measures for the independent variable of professional ethics were adopted from a study by Sylvander (2015) whom further developed the scales constructed by Casali (2011). A total of four statements were adapted from previously mentioned measure. These statements provide statements that refer to the professional ethics and include measures that put emphasis
on the auditor’s role as a professional. Hence, professional ethics is measured through the following statements:

- I always maintain confidentiality.
- I comply with the law, since it benefits society as a whole.
- I do not violate the professional and ethical codes.
- My decisions do not reduce the profession's credibility.

4.5.2.2 Managerial ethics

The measures for the independent variable of managerial ethics were adopted from a study by Sylvander (2015) whom further developed the scales constructed by Casali (2011). A total of four statements were adapted from previously mentioned measure. The four statements provide statements that refer to the managerial ethics and include measures that put emphasis on the auditor’s role as a manager. Thus, managerial ethics is measured through the following statements:

- My decisions do not harm third parties
- My decisions do not harm clients
- My decisions do not harm the bureau’s reputation
- I create value for all our stakeholders by following the bureau’s regulations
- My decision protects the profession's reputation

4.5.3 Control variables

The starting seven questions refer to the control variables which in this study will be: auditors’ gender, age, years in the firm, partner or not, ‘Big 4 or not’ and number of assignments. The purpose of asking these types of questions is presented below in each separate section.

4.5.3.1 Gender

Gender is chosen as a control variable since this might impact the influence of how IC is developed. Eweje and Brunton (2010) have found that women are more ethical aware than males, indicating that the ethical stances taken by the separate genders differ, and thus, influence IC differently. In addition, Broberg et al (2013) stipulate that gender influence organizational level outcomes, including IC. Therefore we ask:

Question: Man or woman?

This will further be coded 1 for men and 2 for women in SPSS.
4.5.3.2 Age
Age is chosen as a control variable since this might influence on how IC is developed. Krambia-Kapardis and Zopiatis (2008) have found that individuals over 30 are more ethical than those under 30 regarding perception. Thus we ask:

*Question: Year of birth?*

The age is calculated through the current year, 2015 subtracted with the respondents’ answers.

4.5.3.3 Years in profession
Years in profession is chosen as a control variable in order to determine if this has an influence on the development of IC. McCullough and Faught (2005) present that work experience have shown to be related to one’s tendency to be more morally conservative or moralistic. Moreover, Pflugrath, Martinov-Bennie and Chen (2007) show that the quality of auditor judgment was explained by the general auditing experience. The years of experience in the profession might affect how IC is developed. Therefore we ask:

*Question: How many years have you been in the profession?*

This will in the result chapter be referred to as TenureProf.

4.5.3.4 Years in the current firm
Years in the current firm is chosen as a control variable in order to determine if this has an influence on the development of IC. Hwan-Yann (2014) shows that business ethics tend to develop over time as the employees is indoctrinated with the ethical values of the firm. Thus, behaviours and actions of employees are related towards how long they have been working at the specific firm. Therefore we ask:

*Question: How many years have you been at the firm?*

This will in the result chapter be referred to as TenureCurrent.

4.5.3.5 Partner or not
Partner or not is chosen as a control variable in order to determine whether the partner position influence the ethical stances of auditors and thus the development of intellectual capital. Broberg (2013) present that auditors as partners are owners of the firm and thus feel solidarity with the values of the firm. Thus, hierarchal position of partner may be influencing the behaviours and actions of auditors. Therefore we ask:
Question: Are you partner or not?

This will further be coded 1 for partner and 0 for non-partner in SPSS.

4.5.3.6 Big 4 or not

Big 4 or not is measuring the size of the respondents’ bureau. The Big 4 audit firms are EY, PwC, KPMG and Deloitte. The size of these audit firms can have an effect on the development of because larger firms have more resources than smaller firms, and therefore, are more likely to develop higher IC than smaller firms (Hwan-Yann, 2014).

This control variable will not be measured from the questionnaire. From SurveyMonkey, one can see which firm each respondent represent based on the email addresses. Thereafter, they are manually coded in SPSS, 1 for Big 4 and 0 for not Big 4.

4.5.3.7 Number of assignments

Number of assignments is chosen as a control variable in order to determine whether the number of assignments of auditors influence the ethical stances of auditors and thus the development of intellectual capital. Francis (2004) show that the number of assignments is related towards the audit quality and thus influence the decisions and behaviours of auditors. Therefore we ask:

Question: Number of assignments over the last six months.

This will in the result chapter be referred to as AssignInvolv.

4.5.3.8 Number of assignments as a signing auditor

Number of assignments as a signing auditor is chosen as a control variable in order to determine whether the number of assignments as a signing auditor influence the ethical stances of auditors and thus the development of intellectual capital. Conroy, Emerson & Pon (2010) argue that as a signing auditor one find questionable ethical issues less acceptable than non signing auditors. Therefore we ask:

Question: Number of assignments over the last six months as a signing auditor.

This will in the result chapter be referred to as AssignSign.

4.5.4 Variables summary

In the variables summary all variables are illustrated in a table in order to make clearness of the operationalization.
**Table 4. Variables summary**

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Independent variables</th>
<th>Control variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organizational capital</td>
<td>1. Managerial ethics</td>
<td>1. Gender</td>
</tr>
<tr>
<td>2. Human capital</td>
<td>2. Professional ethics</td>
<td>2. Age</td>
</tr>
<tr>
<td>3. Social capital</td>
<td></td>
<td>3. Number of assignments</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Number of assignments as a signing auditor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Years in the profession</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Partner or not</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. Years in the current firm</td>
</tr>
</tbody>
</table>

**4.6 Explorative interviews**

In an explorative interview the questionnaire is tested in a small segment of the population in order to make sure the questions are relevant and understandable (Bryman & Bell, 2009). The aim of the explorative interview is to identify possible misunderstandings and problems in the questionnaire before it is sent out to the whole population (Saunders *et al.*, 2009). According to Saunders *et al.*, (2009) the explorative interview should be sent to a segment of the population that reflects the respondents in the population in a good way. In this dissertation, the explorative interview was directed towards two auditors at EY and the office of *Norra Skåne*. EY is one of the so called Big four auditing firms.

The auditors at EY participating in the explorative interview were not included in the final population who received the survey from SurveyMonkey. The explorative interview gave us unbiased insights, since they were given the opportunity to respond and critically give comments to our questionnaire. The auditors indicated a few linguistic typos, but however found the statements provided in the questionnaire as reasonable and easily understood. Therefore, we made no major changes except for linguistics before the questionnaire was sent out to the total population of 3066 auditors.

**4.7 Data analysis**

The empirical data was statistically analysed in IBM’s statistics program SPSS. Firstly, the descriptive statistics is presented. Secondly, the normality of the data will be tested by a one-sample Kolmogorov-Smirnov Test. Normally distributed data is centred to the mean value without to many outliers and thus enhance the usefulness of the data. Thirdly, the internal consistency will be tested by a Cronbach’s Alpha-test. This is done to make sure that the
questions measure the same concepts. Fourthly, a Spearman correlation test will be made in order to see if there are any correlations between the predictor variables (independent and control variables), so called multicollinearity. Fifthly, a Multiple linear regression will be made to see if there are any statistic support for the model. The hypotheses are tested with a significance level of 10%. Thus, the hypotheses will be supported if $p < 0.1$. Sixthly, a factor analysis will be made to see if the concepts are perceived by auditors as different factors or if the auditors perceive the concepts as a combination of factors. Lastly, the new components are tested with multiple linear regressions similar to how we did in step number five.

4.8 Reliability

When constructing an empirical study, it is important to conduct reliable results (Bryman & Bell, 2011). Reliability refers to continuous results of the empirical study in a same given context. Eventual variation in the measurement stem from variations in the measuring object and not due to the shortages in the construction of the empirical study (Denscombe, 2009; Schultz & Tran, 2014). This study use conceptualization of both BE and IC derived from a theoretical framework developed from previous research within the field of area, which enhance the reliability of the study (Denscombe, 2009).

In the operationalization we construct measures in order to quantify the phenomenon, i.e. our theoretical constructs of BE and IC. We define these theoretical constructs into variables to test them quantitatively. Therefore, the reliability of the instruments is dependent on how our operationalization is developed. The process of developing and validating an instrument is in large part focused on reducing error in the measurement process (Kimberlin & Winterstein, 2008). Also, another threat to the reliability is the small sample since our response rate does not cover the whole population of auditors in Sweden.

4.9 Validity

The validity of the study implies that the research methods are generally accepted methods (Denscombe, 2009). This means that the chosen measurements in the study cover the essential questions in the research field. The collected empirical data has to reflect the actual image of the research field in a comprehensive and understandable way (Ibid). Checking the measurements with other experienced scholars within the field of study creates validity to the study (Bryman & Bell, 2011). In this dissertation, the questionnaire was based on previous research by Sylvander (2015) and Hwan-Yann (2013) and conducted in collaboration with lectors at Kristianstad University. Furthermore, the questionnaire was controlled by two
unbiased people, i.e. the auditors at EY, to make sure that the measurement are viable and the variables are capturing the important questions. This was made by an explorative interview which is explained in section 4.6 (explorative interview).

There are three ways of creating validity in quantitative studies. Firstly, one can check that the empirical data was collected in a precise and accurate way (Denscombe, 2009). In our study, all the data was manually controlled before using digital instruments in order to ensure complete and relevant answers. Secondly, one can confirm that the study measures the right variables (Ibid). In this thesis, the variables and hypotheses were derived and embedded from previous research which is intentional in order to enhance validity to the measures. Thirdly, make sure that the explanations derived from the empirical study are correct (Ibid; Schultz & Tran, 2014). In this dissertation, as stated in the second argument, all the variables were derived from the hypotheses in order to secure a red line; combining theory, empirical study, analysis as well as conclusions.

4.10 Generalizability
Generalizability is a measure in order to reflect the applicability of the study on other fields (Denscombe, 2009). In this dissertation the hypotheses are derived from previous theoretical framework, which strengthens the generalizability of the study (Bryman & Bell, 2011). The empirical study is implemented within the geographical area of Sweden and the sample of members of the Supervisory Board of Public Accountants in Sweden. Thus, we claim no generalizability to the population. Instead, we are more interested in testing for the relationship between our concepts (BE and IC) in a given context (auditors in audit firms).

4.11 Ethical considerations
Ethical aspects of research have become a cornerstone for conducting effective and meaningful scientific studies. Thus, the ethical behaviour of individual researchers has been put in the spotlight in resent research (Trimble & Fisher, 2006). American Psychological Association (APA) has conducted a code of conduct including five principles for ethical considerations of scientific research, hereinafter referred to as the Ethics Code (American Psychological Association, 2010).

The first principle, intellectual property, refers to the working relationship of authors and the ethical issue when it comes to who gets credit for authorship. The Ethics Code state that the best way to avoid disagreements about the authorship and who gets credit for the work is to
talk about the working relationship at the beginning of the project, to avoid issues at the end of the working process (*Ibid*). In this dissertation, the working relationship is stipulated by Kristianstad University, where the students are typed as authors and the professors helping and giving guidelines during the working process are typed supervisors.

The second principle, being conscious of multiple roles, refers to multiple relationships where there may be a biased relation to the research topic. Thus, researchers should think carefully before entering into relationships with any person or group (American Psychological Association, 2010). In this study, the only relationship outside the University has been with two auditors at the firm EY, in order to conduct an explorative interview. Thus, relations with biased individuals should not be an issue in this dissertation.

The third principle, following informed-consent rules, refers to the information and respect given to the individuals that have participated in the study (American Psychological Association, 2010). Individuals participating in the research should have all the information needed before taking part; this includes full knowledge of relevant risks and benefits. In this study, the survey is introduced with an information letter, giving all needed information to the participants.

The fourth principle, respecting confidentiality and privacy, are connected to the third principle and reflects the information given to the participants about confidentiality, anonymity and the aim of the study. Upholding individuals' rights to confidentiality and privacy is a central tenet of every psychologist's work (American Psychological Association, 2010). In this study, the information about confidentiality, anonymity and the aim of the study is included in the information letter which is attached as an introduction to the survey. However, it is always questionable to send out surveys, without asking for permission in advance. Due to, the time limit and amount of e-mail individual e-mail addresses in the chosen sample, we never asked for permission.

The fifth principle, taps into ethics resources, and refers to researchers’ knowledge about ethical issues and ethical considerations. The best way for researchers to avoid ethical dilemmas are to search for and take resources that are available into account during the working process (American Psychological Association, 2010). In this study, the Ethical Code was used as a base in order to cover our basis with ethical strategies.
5. Analysis

In this chapter the outcomes of the survey are presented. First, the descriptive statistics of the respondents, and the dependent, independent and control variables are presented. Then the results of the correlation and the multiple linear regressions test are displayed. Hereafter a summary of the results follows. The chapter ends with an introduction of the explorative statistics, including factor analysis and new regressions with the new components.

5.1. Descriptive statistics

To provide an overview, this section starts with a descriptive presentation of the empirical findings. The descriptive presentation include statics of; the control variables, the independent variables and the dependent variables.

5.1.1 Respondents

As stated before, the source of the population was authorised auditors, i.e. the Supervisory Board of Public Accountants in Sweden. The identified population consisted of 3061 auditors in Sweden. An e-mail with link to the survey was sent to all auditors on the list. Table 5 (Respondents) shows the response frequency of the responses as well as the percentages.

<table>
<thead>
<tr>
<th>Category</th>
<th>Response frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>3061</td>
<td>100%</td>
</tr>
<tr>
<td>Bounced Emails</td>
<td>356</td>
<td>11.8%</td>
</tr>
<tr>
<td>Recipients that unregistered</td>
<td>138</td>
<td>4.5%</td>
</tr>
<tr>
<td>Non-responses</td>
<td>2503</td>
<td>81.8%</td>
</tr>
<tr>
<td>Number of responses</td>
<td>64</td>
<td>1,1%</td>
</tr>
<tr>
<td>Disqualified Surveys</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Valid Surveys</td>
<td>64</td>
<td>1,1%</td>
</tr>
</tbody>
</table>

Of the sent survey, none of the email-addresses were invalid; however we had 356 bounced emails. 138 individuals chose to actively unregister from the survey. The survey was open for respondents for twelve days with only one reminder after four days. This gives a total response rate of 1,1 per cent (64 answers), which is considered to be sufficient for statistical testing, but however the sample is rather small. The heavy work load for auditors during this time of year can explain the high number of non-responses.
5.1.2 Control variables

In this section the control variables of; Gender, Age, Years in Profession, Years in the current firm, Partner or not, Number of assignments, Number of assignments as a signing auditor will be statistically analysed. The control variables of Gender and Partner or not as well as Big 4 or not are illustrated in the same table (table 6), since there are only two possible answers; yes or no. Furthermore, the other control variables are all illustrated in the same table (table 7). This is because they reflect a distribution of answers on a scale from 1-10.

The gender of the respondents is slightly weighted to males, where 42 men answered the questionnaire compared to 22 women, see table 6 (Gender). The distributions of Gender reflect the whole population, where 68% are men and 32% are women. The control variable of Partner or not is almost equally divided and there was no major difference in the response rate. The frequency of the control variable Partner or not is illustrated below, see table 6 (Control variables 1). The frequency of the control variable Big 4 or not are almost equally divided, where 30 of the respondents are working on a big 4 audit firm and 34 does not.

<table>
<thead>
<tr>
<th>Control variables</th>
<th>Value</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>42</td>
<td>65,6</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>22</td>
<td>34,4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>Partner</td>
<td>Yes</td>
<td>29</td>
<td>45,3</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>35</td>
<td>54,7</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
<tr>
<td>Big 4</td>
<td>Yes</td>
<td>30</td>
<td>46,9</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>34</td>
<td>53,1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>64</td>
<td>100</td>
</tr>
</tbody>
</table>

The Age of the respondents range from 30 to 70, with a mean of 46.48. The standard deviation of the sample proved to be 10,785, see table 7 (Control variables 2). This indicates that the sample mostly reflect auditors aged over 30. According to Krambia-Kapardis & Zopiatís (2008) individuals over 30 are more ethical than those under 30, which may influence the results. The Years in the profession of the respondents range from 3 to 38, with a mean of 16,3. The standard deviation of the sample proved to be 8,659, see table 7 (Control variables 2). The respondents’ number of Years in the current firm range from 5 to 42, with a mean of 20,75. The standard deviation of the sample proved to be 10,100, see table 7 (Control
variables 2). This indicates that someone in the sample made a mistake in the survey since the minimum value in Years in profession is 3 and the minimum value of Years in the current firm is 5, which not is possible. Furthermore, the respondents’ Number of assignments for the last six months range from 3 to 300, with a mean of 65,20. The standard deviation of the sample proved to be 48,602, see table 7 (Control variables 2). The respondents’ Number of assignments as a signing auditor for the last six months range from 0 to 300, with a mean of 55,22. The standard deviation of the sample proved to be 53,851, see table 7 (Control variables 2).

5.1.3 Dependent variables
This study includes three dependent variables being organizational capital, human capital and social capital. In this section, the statistics of the dependent variables will be further presented. To facilitate the tables, abbreviations are made for each construct. In the parentheses after each construct the number of the question or statement is presented which can be followed in appendix 1 (questionnaire).

5.1.3.1 Organizational capital
The respondents’ answers to the question reflecting the dependent variables of OC proved to be quite high with a mean of 7,34. The standard deviation of the sample proved to be 2,098, see table 8 (Organizational capital). The individual constructs of OC are presented in table 8 (Organizational capital) below.

### Table 7. Control variables 2

<table>
<thead>
<tr>
<th>Control variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of respondents</td>
<td>64</td>
<td>30</td>
<td>70</td>
<td>46,48</td>
<td>10,785</td>
</tr>
<tr>
<td>Years in profession</td>
<td>64</td>
<td>3</td>
<td>38</td>
<td>16,3</td>
<td>8,659</td>
</tr>
<tr>
<td>Years in the current firm</td>
<td>64</td>
<td>5</td>
<td>42</td>
<td>20,75</td>
<td>10,100</td>
</tr>
<tr>
<td>Number of assignments</td>
<td>64</td>
<td>3</td>
<td>300</td>
<td>65,20</td>
<td>48,602</td>
</tr>
<tr>
<td>Number of assignments</td>
<td>64</td>
<td>0</td>
<td>300</td>
<td>55,22</td>
<td>53,851</td>
</tr>
</tbody>
</table>

### Table 8. Organizational Capital

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>OC.IntInfo (q.8)</td>
<td>2</td>
<td>10</td>
<td>7,44</td>
<td>2,322</td>
</tr>
<tr>
<td>OC.OrgCult (q.9)</td>
<td>1</td>
<td>10</td>
<td>6,84</td>
<td>2,230</td>
</tr>
<tr>
<td>OC Struct (q.10)</td>
<td>3</td>
<td>10</td>
<td>7,75</td>
<td>1,741</td>
</tr>
<tr>
<td>Mean of OC</td>
<td>2</td>
<td>10</td>
<td>7,34</td>
<td>2,098</td>
</tr>
</tbody>
</table>
5.1.3.2 Human capital
The respondents’ answers to the question reflecting the dependent variables of HC proved to be quite high with a mean of 7,722. The standard deviation of the sample proved to be 1,851. Furthermore, the individual constructs of HC are presented in table 9 (Human capital) below.

### Table 9. Human Capital

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC.CollabExc (q.11)</td>
<td>2</td>
<td>10</td>
<td>8,08</td>
<td>2,018</td>
</tr>
<tr>
<td>HC.Qual (q.12)</td>
<td>3</td>
<td>10</td>
<td>8,31</td>
<td>1,622</td>
</tr>
<tr>
<td>HC.Expert (q.13)</td>
<td>3</td>
<td>10</td>
<td>7,83</td>
<td>1,769</td>
</tr>
<tr>
<td>HC.Creative (q.14)</td>
<td>2</td>
<td>10</td>
<td>6,73</td>
<td>2,073</td>
</tr>
<tr>
<td>HC.SkillsAbil (q.15)</td>
<td>3</td>
<td>10</td>
<td>7,66</td>
<td>1,775</td>
</tr>
<tr>
<td><strong>Mean of HC</strong></td>
<td><strong>2.6</strong></td>
<td><strong>10</strong></td>
<td><strong>7,722</strong></td>
<td><strong>1,851</strong></td>
</tr>
</tbody>
</table>

5.1.3.3 Social capital
The respondents’ answers to the question reflecting the dependent variables of SC proved to be quite high with a mean of 7,05. The standard deviation of the sample proved to be 2,080. Furthermore, the individual constructs of SC are presented in table 10 (Social capital) below.

### Table 10. Social Capital

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC.ProbSolv (q.16)</td>
<td>1</td>
<td>10</td>
<td>5,64</td>
<td>2,881</td>
</tr>
<tr>
<td>SC.ProfNet (q.17)</td>
<td>2</td>
<td>10</td>
<td>7,11</td>
<td>1,895</td>
</tr>
<tr>
<td>SC.ShareKnow (q.18)</td>
<td>2</td>
<td>10</td>
<td>7,24</td>
<td>1,907</td>
</tr>
<tr>
<td>SC.RelCli (q.19)</td>
<td>3</td>
<td>10</td>
<td>8,22</td>
<td>1,638</td>
</tr>
<tr>
<td><strong>Mean of SC</strong></td>
<td><strong>2</strong></td>
<td><strong>10</strong></td>
<td><strong>7,05</strong></td>
<td><strong>2,080</strong></td>
</tr>
</tbody>
</table>

5.1.4 Independent variables
This study includes two independent variables being managerial and professional ethics. In this section, the statistics of the independent variables will be further presented. To facilitate the tables, abbreviations are made for each construct. In the parentheses after each construct the number of the question or statement is presented which can be followed in appendix 1 (questionnaire).

5.1.4.1 Managerial ethics
The respondents’ answers to the questions reflecting the independent variable of ME proved to be quite high with a mean of 8,596. The standard deviation of the sample proved to be
1,584, see table 11 (Managerial ethics). The individual constructs of ME are presented in the table below.

Table 11. Managerial Ethics

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME.ThirdParty (q.20)</td>
<td>2</td>
<td>10</td>
<td>8,49</td>
<td>1,822</td>
</tr>
<tr>
<td>ME.Clients (q.21)</td>
<td>1</td>
<td>10</td>
<td>8,56</td>
<td>1,699</td>
</tr>
<tr>
<td>ME.BureauRep (q.22)</td>
<td>3</td>
<td>10</td>
<td>8,73</td>
<td>1,456</td>
</tr>
<tr>
<td>ME.BureauRule (q.23)</td>
<td>4</td>
<td>10</td>
<td>8,62</td>
<td>1,506</td>
</tr>
<tr>
<td>ME.ProfRep (q.24)</td>
<td>4</td>
<td>10</td>
<td>8,73</td>
<td>1,439</td>
</tr>
<tr>
<td><strong>Mean of ME</strong></td>
<td><strong>2,8</strong></td>
<td><strong>10</strong></td>
<td><strong>8,596</strong></td>
<td><strong>1,584</strong></td>
</tr>
</tbody>
</table>

5.1.4.2 Professional ethics

The respondents’ answers to the questions reflecting the independent variable of PE proved to be quite high with a mean of 9,185. The standard deviation of the sample proved to be 1,144, see table 12 (Professional ethics). The individual constructs of PE are presented in the table below.

Table 12. Professional Ethics

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std.Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PE.Confidential (q.25)</td>
<td>6</td>
<td>10</td>
<td>9,66</td>
<td>0,761</td>
</tr>
<tr>
<td>PE.ComplyLaw (q.26)</td>
<td>3</td>
<td>10</td>
<td>8,95</td>
<td>1,469</td>
</tr>
<tr>
<td>PE.ProfCode (q.27)</td>
<td>5</td>
<td>10</td>
<td>9,19</td>
<td>1,075</td>
</tr>
<tr>
<td>PE.ProfCred (q.28)</td>
<td>4</td>
<td>10</td>
<td>8,94</td>
<td>1,271</td>
</tr>
<tr>
<td><strong>Mean of PE</strong></td>
<td><strong>4,5</strong></td>
<td><strong>10</strong></td>
<td><strong>9,185</strong></td>
<td><strong>1,144</strong></td>
</tr>
</tbody>
</table>

5.2 Hypotheses testing

In this section the hypotheses developed in the theory chapter will be statistically tested, to determine whether they are rejected or not. Furthermore, the research model will be statistically tested in order to determine whether there are any significant relations. Firstly, the normality of the data will be tested by a one-sample Kolmogorov-Smirnov Test. Normally distributed data is centred to the mean value without to many outliers and thus enhance the usefulness of the data. Secondly, the internal consistency will be tested by a Cronbach’s Alpha-test. This is done to make sure that the questions measure the same concepts. Thirdly, a Spearman correlation test will be made in order to see if there are any correlations between the predictor variables (independent and control variables), so called multicollinearity.
Fourthly, a Multiple linear regression will be made to see if there are any statistic support for the model.

5.2.1 Kolmogorov-Smirnov
The Kolmogorov-Smirnov statistic test using summative scores shows that only the variables of age and SC are normally distributed. This test assesses the normality of distribution of scores where a non-significant result (sig. value of more than .05) indicates normality (Pallant, 2010). Apart from the control variable age, only the summative score of SC.MEAN is significant. In the test with summative scores, the sig. value of many of the variables show .00, which indicate a violation of normality. However, according Pallant (2010), this is quite common in larger samples. In order to reduce the violation of normality, one may logarithm the values (Pallant, 2010). This will force the outliers towards the centre of the values and thus reduce the violation of normality. Nonetheless, the test of the logarithmic scales show no major impact on the normality as illustrated in table 13 (Kolmogorov-Smirnov) below. Therefore, using logarithmic, manipulated values do not contribute further in the statistics.

<table>
<thead>
<tr>
<th>Test with summative variables</th>
<th>Sig.</th>
<th>Test with logarithmic variables</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME.MEAN</td>
<td>.017</td>
<td>ln.SC</td>
<td>.032</td>
</tr>
<tr>
<td>PE.MEAN</td>
<td>.000</td>
<td>ln.OC</td>
<td>.000</td>
</tr>
<tr>
<td>SC.MEAN</td>
<td>.200*</td>
<td>ln.HC</td>
<td>.000</td>
</tr>
<tr>
<td>OC.MEAN</td>
<td>.004</td>
<td>ln.ME</td>
<td>.005</td>
</tr>
<tr>
<td>HC.MEAN</td>
<td>.006</td>
<td>ln.PE</td>
<td>.000</td>
</tr>
<tr>
<td>Age</td>
<td>.068*</td>
<td>Age</td>
<td>.068*</td>
</tr>
<tr>
<td>BIG7</td>
<td>.000</td>
<td>BIG7</td>
<td>.000</td>
</tr>
<tr>
<td>BIG4</td>
<td>.000</td>
<td>BIG4</td>
<td>.000</td>
</tr>
<tr>
<td>Gender</td>
<td>.000</td>
<td>Gender</td>
<td>.000</td>
</tr>
<tr>
<td>TenureCurrent</td>
<td>.004</td>
<td>TenureCurrent</td>
<td>.004</td>
</tr>
<tr>
<td>TenureProf</td>
<td>.001</td>
<td>TenureProf</td>
<td>.001</td>
</tr>
<tr>
<td>Partner</td>
<td>.000</td>
<td>Partner</td>
<td>.000</td>
</tr>
<tr>
<td>AssignInvolved</td>
<td>.001</td>
<td>AssignInvolved</td>
<td>.001</td>
</tr>
<tr>
<td>AssignSign</td>
<td>.001</td>
<td>AssignSign</td>
<td>.001</td>
</tr>
</tbody>
</table>

Since not all of the dependent variables are not normally distributed, this lead to that we use a Spearman correlation test in order to examine correlations. Even if two of the dependent variables individually are not normally distributed, when testing them in a regression model the points lay on a reasonably straight line in the Normal Prabability Plot (P-P) of the
Regression Standardised Residual (Pallant, 2010). This indicates that there are no major deviations from normality. According to Pallant (2010) the residuals should be normally distributed about the predicted DV scores. Therefore, the variables are adequate for analysis.

5.2.2 Cronbach’s Alpha-test

According to Pallant (2010) one of the most commonly used indicators of internal consistency is Cronbach’s Alpha coefficient. However, Cronbach’s Alpha test do not completely secure that there will be no internal consistency, but the test is a good indicator of how well each item are measuring the same construct. Ideally, the Cronbach alpha coefficient of a scale should be above .7 (Pallant, 2010). In table 14 (Cronbach’s Alpha Test) the alpha values for the different constructs are presented.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Standardized Items</th>
<th>N of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Capital</td>
<td>.704</td>
<td>.739</td>
<td>4</td>
</tr>
<tr>
<td>Human Capital</td>
<td>.872</td>
<td>.878</td>
<td>5</td>
</tr>
<tr>
<td>Organizational capital</td>
<td>.858</td>
<td>.867</td>
<td>3</td>
</tr>
<tr>
<td>Managerial Ethics</td>
<td>.766</td>
<td>.772</td>
<td>4</td>
</tr>
<tr>
<td>Professional Ethics</td>
<td>.830</td>
<td>.841</td>
<td>5</td>
</tr>
</tbody>
</table>

As illustrated in the table above, all the alpha values are above .7, which indicate that the underlying items are all measuring the same construct. Thus, the underlying items of each construct may be summarized through mean values illustrated as Cronbach’s Alpha Standardized Items. According to Hair, Black, Babin, & Anderson (2010) a summated scale has the advantage of reduced measurement error; it represents the multiple facets of a concept and may be used as a compromise between the use of a surrogate variable and the use of factor scores. Furthermore, in order to analyse whether the respondents perceive the constructs as being separate, factor analysis is used.

5.2.3 Spearman correlation test

According to Pallant (2010) significance levels are at 1%, 5% and 10% preferable and thus they will respectively be classified as high and low levels of significance in this study. The Kolmogorov-Smirnov test showed that the dependent variables were not normally distributed, thus a Spearman correlations test is made. This is because Pearson correlation test is appropriate to use if the dependent variables are normally distributed or if the sample size is over 300, since this is not the case in our study, a Spearman correlation test is used. The correlation matrix is
presented in Appendix 3 (Correlation matrix), where a number of highly significant correlations are detected. The matrix result illustrates a first indication of a positive relationship between professional and managerial ethics. There is a statistically significant positive correlation between professional and managerial ethics at (.674**), which indicates that auditors have a commitment towards both ethical foundations. Managerial ethics has a statistically significant positive correlation with HC (.338**) and OC (.258*) but not with SC (.155). This indicates that auditors that base their ethical choices on managerial ethics develop only the internal aspects of IC, hence HC and OC. Professional ethics has a statistically significant positive correlation with HC (.313*) and OC (.299*) but not with SC (.179). This indicates that auditors that base their ethical choices on their professional ethics, in similarity to the managerial ethics develop only the internal aspects of IC, hence HC and OC.

Furthermore, control variable tenure profession has a statistically significant negative correlation (−.245†) with SC and a statistically significant positive correlation with OC (.169†). This indicates that the longer an auditor has been practicing the profession has a negative influence on the development of SC but a positive influence of the development of OC. In addition, multicollinearity was found between Partner and AssignSign. Also multicollinearity was found between TenureProf and AssignInvolv. This is not surprising since more responsibility often comes with age and experience. Therefore, the variables AssignSign and TenureProf are excluded from further tests.

5.2.4 Multiple linear regression
The aim of the study is to explain how managerial and professional ethics of auditors affect the development of IC in audit firms. Furthermore, IC is conceptualized through three under-concepts being HC, OC and SC. Thus, this study includes three regression models each tested a set of two out of the six hypotheses derived in the literature review. The first model’s (Model 1) dependent variable was organizational capital; the second model’s (Model 2) dependent variable was human capital; and the third model’s (Model 3) dependent variable was social capital, each of these variables representing a specific dimension of IC. Each model than included two independent variables – professional ethics and managerial ethics as well as six control variables: auditors’ gender, age, years in the firm, years in branch, number of assignments and whether partner or not. In the sections below the measures are divided in dependent, independent and control variables.
To reduce multicollinearity, one can check VIF values on the independent and control variables. For the VIF value, a value above 4 indicates that the variable is highly correlated and should be removed (Pallant, 2010). The output, see table 15 (VIF values) shows which control variables to remove in order to get a significant model, i.e. VIF values exceeding 4 are removed, hence; TenureProf, AssignInvolv, AssignSign and Age.

<table>
<thead>
<tr>
<th>Model</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME.MEAN</td>
<td>2.472</td>
</tr>
<tr>
<td>PE.MEAN</td>
<td>2.837</td>
</tr>
<tr>
<td>Gender</td>
<td>1.257</td>
</tr>
<tr>
<td>TenureCurrent</td>
<td>3.034</td>
</tr>
<tr>
<td>TenureProf</td>
<td>27.146</td>
</tr>
<tr>
<td>Partner</td>
<td>1.572</td>
</tr>
<tr>
<td>AssignInvolv</td>
<td>4.507</td>
</tr>
<tr>
<td>AssignSign</td>
<td>6.231</td>
</tr>
<tr>
<td>Age</td>
<td>18.413</td>
</tr>
<tr>
<td>BIG4</td>
<td>1.373</td>
</tr>
</tbody>
</table>

Furthermore, the independent variables do both have VIF-values above 2, which is relatively high. Firstly, one regression where both of the independent variables are included, secondly a regression where only PE is included and thirdly a regression where only ME is included. This is done because in the regression model where both ME and PE are included, the VIF value exceeds 2. Therefore, we also make regression analysis with ME and PE separately. This is made in order to make the values from the regression more robust, since the VIF values were relatively high.

In order to check for normality in our tests, Pallant (2010) suggests that residuals should be normally distributed about the predicted DV scores. When testing for regression, we also examined the residuals in the Normal Probability Plot (P-P) and the Scatterplot. In the P-P plot, all three dependent variables are on a reasonably straight diagonal line from bottom left to top right, indicating that there are no major deviations from normality (*Ibid*). In the Scatterplots, the scores are reasonably centralised and concentrated in the centre along the 0 point. Therefore, our regression models are acceptable for drawing conclusions.
Initially, it is of interest to see how much of the variance in the dependent variable that is explained by the model. This is done through observation of the R square values in table 16 above. However, since our small sample the adjusted R square value provide a better estimate of the true value of the population (Pallant, 2010). As the table above show, the range of the adjusted $R^2$ is between 0.009 and 0.080. Furthermore, since none of the model includes more than one significant variable, the Beta values are of no interest for further analyse (Pallant, 2010).

The first model is not significant and the variation of organizational capital is only explained by 1.2 per cent of the model. Furthermore, none of the variables proved to be significant. Hence, we find no relations in the model. Since neither of ME or PE proved to be significant, we reject hypothesis 1 (A stronger reliance on managerial ethics in decision-making is positively related to the development of organizational capital). However, we do not reject hypotheses 2 (A stronger reliance on professional ethics in decision-making is not related to the development of organizational capital).

The second model is significant at $p = 0.093^\dagger$, hence at 10 per cent level. Furthermore, the variance in HC is explained by 8 per cent. This indicates that there is a positive relation between BE and the development of human capital. Nonetheless, only the independent variable of ME proved to be significant. Thus, we do not reject hypothesis 3 (A stronger

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th></th>
<th>Model 2</th>
<th></th>
<th></th>
<th>Model 3</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Organizational capital</td>
<td>Human capital</td>
<td>Social capital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Managerial ethics</td>
<td>.278</td>
<td>.300</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional ethics</td>
<td>.234</td>
<td>.363</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.358</td>
<td>.498</td>
<td>.128</td>
<td>.390</td>
<td>-1.161</td>
<td>.416</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TenureCurrent</td>
<td>.014</td>
<td>.029</td>
<td>-0.014</td>
<td>.023</td>
<td>-0.012</td>
<td>.024</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partner</td>
<td>-.375</td>
<td>.550</td>
<td>-.627</td>
<td>.431</td>
<td>-0.643</td>
<td>.459</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIG4</td>
<td>.479</td>
<td>.528</td>
<td>.022</td>
<td>.414</td>
<td>-0.121</td>
<td>.441</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.454</td>
<td>2.766</td>
<td>4.177$^\dagger$</td>
<td>2.165</td>
<td>5.573*</td>
<td>2.310</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-value</td>
<td>1.127</td>
<td></td>
<td>1.918$^\dagger$</td>
<td></td>
<td>1.092</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>.012</td>
<td></td>
<td>.080</td>
<td></td>
<td>.009</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIF value, highest</td>
<td>2.223</td>
<td>2.223</td>
<td>2.223</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $n=64$, *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; † $p < 0.10$
reliance on managerial ethics in decision-making is positively related to the development of human capital). In addition, we do not reject hypotheses 4 (A stronger reliance on professional ethics in decision-making is not related to the development of human capital), since the independent variable of PE was not significant.

The third model is not significant and social capital is only explained by 0.9 per cent of the model. Furthermore, since neither of ME or PE proved to be significant, we reject hypothesis 5 (A stronger reliance on managerial ethics in decision-making is not related to the development of social capital). However, do not reject hypotheses 6 (A stronger reliance on professional ethics in decision-making is positively related to the development of social capital).

To further analyse the data, regression with each independent variable separate is made to make the results more robust, since the VIF-values of the independent variables exceeded 4.

In the tables below, the regressions with the independent variables separately are presented. In table 17 (Regressions with PE) the results of the regressions with the independent variable of PE is presented.

<table>
<thead>
<tr>
<th>Table 17. Regressions with PE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regressions with PE</strong></td>
</tr>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>TenureCurrent</td>
</tr>
<tr>
<td>BIG4</td>
</tr>
<tr>
<td>F-value</td>
</tr>
<tr>
<td>Adj. R²</td>
</tr>
<tr>
<td>VIF value, highest</td>
</tr>
</tbody>
</table>

Note: n=64, *** p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10

PE proves to be individually significant in model 2 and weak significant in both model 1 and 3, however since the models themself as a whole are insignificant; no further conclusions can be drawn.
In table 18 (Regressions with ME) the results of the regressions with the independent variable of ME is presented.

Table 18. Regressions with ME

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1 Organizational capital</th>
<th>Model 2 Human capital</th>
<th>Model 3 Social capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial ethics</td>
<td>.416†</td>
<td>.209</td>
<td>.471**</td>
</tr>
<tr>
<td>Gender</td>
<td>.330</td>
<td>.494</td>
<td>.112</td>
</tr>
<tr>
<td>TenureCurrent</td>
<td>.011</td>
<td>.028</td>
<td>-.015</td>
</tr>
<tr>
<td>Partner</td>
<td>-.426</td>
<td>.542</td>
<td>-.655</td>
</tr>
<tr>
<td>BIG4</td>
<td>.525</td>
<td>.521</td>
<td>.047</td>
</tr>
<tr>
<td>Constant</td>
<td>3.557</td>
<td>2.163</td>
<td>4.769**</td>
</tr>
<tr>
<td>F-value</td>
<td>1.283</td>
<td></td>
<td>2.294†</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>.022</td>
<td></td>
<td>.093</td>
</tr>
<tr>
<td>VIF value, highest</td>
<td>1.376</td>
<td></td>
<td>1.376</td>
</tr>
</tbody>
</table>

Note: n=64; *** p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10

ME proves to be individually significant in all three models, however since only model 2 itself is significant; only conclusions can be drawn in model 2. This further strengthens what was found in the regressions with both independent variables, indicating that ME is related to the development of HC.

5.2.5 Summary of the hypotheses testing

In the table below the results of the hypotheses testing is illustrated, see table 19 (Summary of the hypothesis testing)
Table 19. Summary of the hypotheses testing

<table>
<thead>
<tr>
<th>Intellectual capital</th>
<th>Hypotheses</th>
<th>Rejected/Not rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational capital</td>
<td><strong>Hypothesis 1:</strong> A stronger reliance on managerial ethics in decision-making is positively related to the development of organizational capital.</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td><strong>Hypothesis 2:</strong> A stronger reliance on professional ethics in decision-making is not related to the development of organizational capital</td>
<td>Not rejected</td>
</tr>
<tr>
<td>Human capital</td>
<td><strong>Hypothesis 3:</strong> A stronger reliance on managerial ethics in decision-making is positively related to the development of human capital.</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td><strong>Hypothesis 4:</strong> A stronger reliance on professional ethics in decision-making is not related to the development of human capital.</td>
<td>Rejected</td>
</tr>
<tr>
<td>Social capital</td>
<td><strong>Hypothesis 5:</strong> A stronger reliance on managerial ethics in decision-making is not related to the development of social capital.</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td><strong>Hypothesis 6:</strong> A stronger reliance on professional ethics in decision-making is positively related to the development of social capital.</td>
<td>Not rejected</td>
</tr>
</tbody>
</table>

5.3 Explorative statistics

To explore whether the auditors perceive the model in the same way as we have presented in the literature review, we perform explorative statistics. The explorative statistics will include a factor analysis to see whether auditors perceive the concepts of IC and BE in the way that we have presented them in the literature review. This is because IC is derived from other research fields than auditing and accounting, therefore, the auditors may understand the concepts in a different way. Thereafter, a regression is made with the possible new concepts to explore if there are arguments for a new model building.

5.3.1 Factor analysis

There are certain steps involved when using factor analysis. The first step is to check for the assessment of the suitability of the data for factor analysis. Pallant (2010) describe two major issues to consider when determining whether a particular data set is suitable for factor analysis: sample size and the strength of the relationship between the variables. Considering the sample size, Pallant suggest at least 300 respondents in order to feel comfortable using factor analysis. Our study only consist of 64 respondents, however, the low rate of respondents may be compensated by good values in the Kaiser-Meyer-Olkin (KMO) and Bartlett’s test. These tests measure the strength of the intercorrelations among the items. In this study, the KMO and Bartlett’s test statistics are presented in table 20 (KMO and Bartlett’s Test) below. The KMO index’s minimum value is suggested to be at least .6 in order to be
considered appropriate for factor analysis. Bartlett’s test of sphericity should be significant (p < .05) for a good factor analysis.

Table 20. KMO and Bartlett’s Test

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</td>
<td>KMO Value</td>
<td>.877</td>
</tr>
<tr>
<td></td>
<td>Approx. Chi-Square</td>
<td>595.349</td>
</tr>
<tr>
<td></td>
<td>df</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 20 (KMO and Bartlett’s Test) shows that the sample is adequate for factor analysis as the KMO index show a value of .877 and the Bartlett’s Test of Sphericity is significant at p = .00.

For the factor analysis, we are interested in knowing if the dependent variables and the independent variables are perceived as different components. Hence, we generate two different factor analyses; one for the dependent variable (IC) and one for the independent variable (BE). In Appendix 3 (Factor analysis) the result of the factor analysis is presented. In the literature review, we conceptualized business ethics as a duality of managerial ethics and professional ethics in the audit context. The conceptualization was derived from previous research (eg. Sylvander, 2015; Broberg et al, 2014; Broberg, 2013; Öhman et al, 2012), where managerial ethics emphasise duties as managers in accordance with the rules of the firm while professional ethics emphasise duties as professionals obeying laws et cetera. However, the factor analysis shows that auditors do not perceive business ethics as a duality of managerial and professional ethics. In table 21 on page 59 (Rotated component matrix BE) the perceived components of BE is illustrated.

There is a tendency that auditors seem to perceive ME.ProfRep (My decision protects the profession's reputation) and ME.BureauRule (I create value for all our stakeholders by following the bureau’s regulations) separated from the original construct of managerial ethics, since they load on component 1 where professional ethics is dominant, see table 21. Therefore, they do not perceive business ethics as a separation into managerial and professional ethics. Instead, they tend to emphasise a different view to the subject being a separation of internal and external ethics. Furthermore, factor analysis of BE show that Component 1 includes more constructs than Component 2, since ME.ProfRep and
ME.BureauRule load on component 1. This indicates that auditors perceive component 1, now named *internal ethics*, as the more dominant. This may be explained through that auditors see the reputation of the profession as being an internal duty. This is because the reputation of the profession is of importance for the performance of the bureau; logically better reputation indicates better business activities with more clients (Greenwood, Li, Prakash & Deephouse, 2005). Regarding ME.BureauRule, one explanation of why this construct is loaded in component 1 could be that it is an internal aspect, following the rules of the bureau. This is interesting for further investigation. The internal ethics is seemed to be dominant, which further strengthen the conceptualization of the term ‘*firmalization*’ developed by Broberg (2013), meaning that auditors and audit work are strongly influenced by the audit firm. For individual auditors, this *firmalization* involves a strong conviction that audits carried out according to the audit firm’s system (manual, databases etc.) are of high quality and how auditors trust that ‘the firm’s way’ of carrying out audits meets all obligations required (*Ibid*)

*Table 21. Rotated component matrix BE*

<table>
<thead>
<tr>
<th>Construct</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ME.ProfRep</td>
<td>.882</td>
</tr>
<tr>
<td>PE.ComplyLaw</td>
<td>.851</td>
</tr>
<tr>
<td>ME.BureauRule</td>
<td>.843</td>
</tr>
<tr>
<td>PE.ProfCode</td>
<td>.828</td>
</tr>
<tr>
<td>PE.ProfCred</td>
<td>.823</td>
</tr>
<tr>
<td>PE.Confidential</td>
<td>.639</td>
</tr>
<tr>
<td>ME.BureauRep</td>
<td>.591</td>
</tr>
<tr>
<td>ME.Clients</td>
<td></td>
</tr>
<tr>
<td>ME.ThirdParty</td>
<td></td>
</tr>
</tbody>
</table>

The factor analysis of the independent variables has now been discussed. However, a factor analysis of the dependent variable has also been done, which we now will discuss further. As presented above, auditors perceive BE differently from what was expected from the literature review. Furthermore, this was also the case for the dependent variable IC. In the literature review, IC was conceptualized through three under-concepts being OC, HC and SC which was derived from previous research (e.g. Hwan-Yann. 2013; Youndt & Snell, 2004; Roos *et al*, 1998). Although, the factor analysis illustrate how auditors do not perceive IC in this
separation of three under-concepts. Instead, there is a tendency that auditors seem to perceive HC as dominant in component 1 and OC dominant in component 2, while SC load on both, see table 22 (Rotated component matrix IC).

Table 22. Rotated component matrix IC

<table>
<thead>
<tr>
<th>Construct</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SC.RelCli</td>
<td>.842</td>
</tr>
<tr>
<td>HC.Qual</td>
<td>.812</td>
</tr>
<tr>
<td>HC.SkillsAbil</td>
<td>.748</td>
</tr>
<tr>
<td>HC.Expert</td>
<td>.748</td>
</tr>
<tr>
<td>HC.Creative</td>
<td>.628</td>
</tr>
<tr>
<td>SC.ShareKnowl</td>
<td>.623</td>
</tr>
<tr>
<td>SC.ProfNet</td>
<td>.437</td>
</tr>
<tr>
<td>SC.ProbSolv</td>
<td></td>
</tr>
<tr>
<td>OC.IntInfo</td>
<td>.433</td>
</tr>
<tr>
<td>OC.OrgCult</td>
<td>.436</td>
</tr>
<tr>
<td>OC.Struct</td>
<td>.562</td>
</tr>
<tr>
<td>HC.CollabExc</td>
<td>.479</td>
</tr>
</tbody>
</table>

The first component seems to include constructs that are focused on individual knowledge development among the auditors in order to meet the needs of the clients, which is strengthened by that the constructs of SC.RelCli and SC.ShareKnowl are loading on component 1. The need from clients may drive the development of knowledge, skills and other abilities in order to gain long-term relations. Thus, component 1 will be named *tacit individual capital*. By this we mean that the knowledge is developed through individual learning and cannot easily be imitated by other individuals. The second component seems to include constructs that are focused on collective knowledge which is developed from an organisational level, which is strengthened by that the constructs of SC.ProbSolv and SC.ProfNet are loading on component 2. This indicates that auditors as individuals drive a collective organizational knowledge. Thus, we consider this component as *collective organizational capital*.

5.3.2 Multiple linear regressions with new concepts

This section aim to analyse whether the new components of BE (*internal and external ethics*) derived from the factor analysis (see, 5.3.1) influence the development of the new components of IC (*tacit individual capital* and *collective organizational capital*). Therefore,
we conduct two different models, one where the dependent variable is tacit individual capital and one where the dependent variable is collective organisational capital. Before the regressions are conducted we check the VIF values to reduce multicollinearity. For the VIF value, a value above 4 indicates that the variable is highly correlated and should be removed (Pallant, 2010). The output, see table 23 (VIF values) shows which control variables to remove in order to get a significant model, i.e. VIF values exceeding 4 are removed, hence; TenureProf, AssignInvolv, AssignSign and Age.

<table>
<thead>
<tr>
<th>Model</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>1.269</td>
</tr>
<tr>
<td>TenureCurrent</td>
<td>3.011</td>
</tr>
<tr>
<td>TenureProf</td>
<td>27.416</td>
</tr>
<tr>
<td>Partner</td>
<td>1.584</td>
</tr>
<tr>
<td>AssignInvolv</td>
<td>4.475</td>
</tr>
<tr>
<td>AssignSign</td>
<td>6.238</td>
</tr>
<tr>
<td>Age</td>
<td>18.895</td>
</tr>
<tr>
<td>BIG4</td>
<td>1.372</td>
</tr>
<tr>
<td>Int.Ethics.Factor</td>
<td>1.396</td>
</tr>
<tr>
<td>Ext.Ethics.Factor</td>
<td>1.160</td>
</tr>
</tbody>
</table>

In order to check for normality in our tests, Pallant (2010) suggests that residuals should be normally distributed about the predicted DV scores, as we did with the summative scores. When testing for regression, we also examined the residuals in the Normal Probability Plot (P-P) and the Scatterplot. In the P-P plot, both dependent variables are on a reasonably straight diagonal line from bottom left to top right, indicating that there are no major deviations from normality (Ibid). In the Scatterplots, the scores are reasonably centralised and concentrated in the centre along the 0 point. Therefore, our regression models are acceptable for drawing conclusions.
Initially, it is of interest to see how much of the variance in the dependent variable that is explained by the model. This is done through observation of the R square value in table 24. However, since our small sample the adjusted R square value provide a better estimate of the true value of the population (Pallant, 2010). As the table above show, the range of the adjusted R^2 is between 0,016 and 0,102. Furthermore, since none of the models include more than one significant variable, the Beta values are of no interest for further analyse (Pallant, 2010). By observing the F-values, we find that neither the first nor the second model proves to be significant. Tacit individual capital is only explained by 4,1 per cent of the model and collective organizational capital is only explained by 2,2 per cent of the model. Therefore, no further analysis of the models may be drawn.

### Table 24. Regressions with tacit individual capital and collective organizational capital

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1 Tacit individual capital</th>
<th>Model 2 Collective organizational capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std.B</td>
<td>Std.Error</td>
</tr>
<tr>
<td>Int.Ethics.Factor</td>
<td>.220</td>
<td>.134</td>
</tr>
<tr>
<td>Ext.Ethics.Factor</td>
<td>.019</td>
<td>.133</td>
</tr>
<tr>
<td>Gender</td>
<td>.363</td>
<td>.280</td>
</tr>
<tr>
<td>TenureCurrent</td>
<td>-.015</td>
<td>.016</td>
</tr>
<tr>
<td>Partner</td>
<td>-.551†</td>
<td>.308</td>
</tr>
<tr>
<td>BIG4</td>
<td>.073</td>
<td>.293</td>
</tr>
<tr>
<td>Constant</td>
<td>.577</td>
<td>.655</td>
</tr>
<tr>
<td>F-value</td>
<td>1,421</td>
<td></td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>.041</td>
<td></td>
</tr>
<tr>
<td>VIF value, highest</td>
<td>1,422</td>
<td></td>
</tr>
</tbody>
</table>

Note: n=64, *** p < 0.001; ** p < 0.01; * p < 0.05; † p < 0.10
6. Discussion and conclusion

The conclusion chapter is the final part of the dissertation. The chapter include a summary of the dissertation together with the findings. This is followed by the contributions to the field of study. The chapter ends with a reflection of the findings and suggestions for future research.

6.1 Summary of the dissertation

This study aims at answering the research question how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms. Prior research has explained the duality of business ethics for auditors (Sylvander, 2015, Broberg, 2013) having managerial ethics as well as professional ethics. Furthermore, auditors act in a knowledge-intensive business were knowledge education and networks are essential (Hwan-Yann, 2014), thus intellectual capital has emerged as an important subject. Therefore, this study explores how business ethics of auditors is related towards the development of intellectual capital in audit firm within the area of Sweden.

The study is theoretically based on a fundamental positivistic philosophy with a deductive approach. The theoretical base works as a foundation in order to develop the literature review. The literature review led up to hypotheses of how the business ethics of auditors influence the development of intellectual capital. These hypotheses were empirically tested with a quantitative questionnaire. Furthermore, the data from the questionnaire was then statistically tested in order to determine if the hypotheses were significant or not and moreover if the business ethics of auditors influence the development of IC. IC, the dependent variable in this dissertation is a wide term, and thus in accordance with prior research (see Hwan-Yann, 2014), IC was conceptualized through three under concept being HC, SC and OC. BE, the independent variable, were under-conceptualized to managerial ethics and professional ethics in line with the study by (Sylvander, 2015). By conceptualizing the dependent variable (IC) and the independent variable (BE) in accordance with prior research, the measurement could be adopted and used in the empirical study with some changes in order to match the specific context of auditors.

The statistical analysis proved no significance to the model. According to Pallant (2010) the significance levels in the logistic regression should be below 0.05 in order to support the model as being worthwhile (Pallant, 2010). The logistic regression only proved significance for model two, where HC were the dependent variable analysed. This indicates that there is a
positive relation between BE and the development of human capital. Nonetheless, only the independent variable of ME proved to be significant. Thus, the empirical study shows that the development of HC is influenced by ME in the context of auditors. Therefore, to answer the research question of how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms, our empirical study only find evidence for positive relation between ME and HC. However, to fully understand the relationship one needs to further analyse how auditors perceive BE and IC. The factor analysis show that there is a tendency that auditors do not seem to perceive BE as a separation into managerial and professional ethics. Instead, they tend to emphasise a different view to the subject being a separation of internal and external ethics. In addition auditors seem to perceive IC as a separation into two components and not three being presented as tacit individual capital and collective capital. This empirical finding, further develop the conceptualization of BE and IC in the context of audit firms. Nonetheless the regressions with the new concepts prove no significance, which may be explained by the small sample and more studies in the area would further strengthen the concepts and the relations between them.

6.2 Discussion

In the discussion section, the findings as well as non-findings of the study is presented.

6.2.1 Reflections of the findings and non-findings

The inspiration from this study came from Hwan-Yann (2013) who explored the relationship between BE and IC. This article found some interesting relations. However, BE was conceptualized in a general way being oversimplification to fit in specific contexts. This study further explore the relation between BE and IC with an aim to explain how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms. This study provides some interesting results; therefore, some potential explanations will now be discussed. Firstly the hypotheses are discussed, followed by the result of the factor analysis and how regressions of the new concepts of internal and external ethics influence the development of tacit individual capital and collective organizational capital.

6.2.1.1 Discussion of the hypotheses

In this section the findings from the regression analysis and how these affect the hypotheses are discussed. The first two hypotheses are directed towards the under-concept OC were hypothesis 1 is formulated as: A stronger reliance on managerial ethics in decision-making is positively related to the development of organizational capital and hypothesis 2 is formulated
as: A stronger reliance on professional ethics in decision-making is not related to the development of organizational capital. The regression proved no significance for neither ME nor PE, thus hypothesis 1 is rejected and hypothesis 2 is not rejected. The support for hypothesis 2 was expected, since PE refers to an external perspective. However, the fact that the regression proved no significance for ME is strange and surprising, since ME reflect an internal perspective. This may be explained by how auditors interpret ME, since one may argue for both an internal as well as an external perspective. In the context of auditors the managerial duties reflect moral philosophies, such as reputational egoism and rule utilitarianism (Sylvander, 2015). Thus, ME in the context of auditors include aspects that are directed towards both individuals (reputational egoism), were managers focus on protecting organizational reputation, as well as the society as a whole (rule utilitarianism), were managers focus on rules that are meant to benefit the majority. This may explain the fact that hypothesis 1 is rejected.

The following two hypotheses are directed towards the under-concept HC were hypothesis 3 is formulated as: A stronger reliance on managerial ethics in decision-making is positively related to the development of human capital and hypothesis 4 is formulated as: A stronger reliance on professional ethics in decision-making is not related to the development of human capital. In the regression, hypothesis 4 was not found significant which is aligned with our expectations and thus the hypothesis is not rejected. This may be explained because PE refers to an external perspective and thus does not influence the development of the internal construct HC. However the most interesting finding from the regression analysis is that hypothesis 3 was found significant. This is not surprising because of the fact that the ME consider more internal aspects of the organisation and this include human resources. Auditors as manager’s focus on protecting the bureau’s as well as the profession’s reputation. Moreover, the managers also adapt to rules and regulations set by the bureau that adds value for all stakeholders. Since the auditor organisation is known to be strictly hierarchic, one possible explanation to why managerial ethics drives the development of HC could be that managers want to affect the upcoming, new entries to the profession and its codes. This is done in order to both protect the bureau and also the profession as a whole. Thus, the managers set up ethical frameworks for their lower level colleagues in order to adapt to the profession. This is also in line with what Mintzberg’s finding (1980); audit firms are professional organisations where the operating core consists of the professionals who shape it. The strong individuals, i.e. the managers, shape the organisation that simultaneously shapes
them. In addition, this is also what the Upper Echelon Theory by Hambrick and Mason (1984) states. The strategic choices are determined by the values of dominant actors of the organisation, such as top managers (TM). The main assumption of UET is that managers base their decisions, behaviours and actions according to their own personalised lenses (Awa, Eze, Urieto, & Inyang, 2015). Furthermore, these personalised lenses are a construct of the individual experiences and other personal factors that have an effect on organisational outcomes (Umans, 2012). Thus, according to the UET, organizations become reflections of its TM (Awa et al., 2015).

The last two hypotheses are directed towards the under-concept SC were hypothesis 5 is formulated as: A stronger reliance on managerial ethics in decision-making is not related to the development of social capital and hypothesis 6 is formulated as: A stronger reliance on professional ethics in decision-making is positively related to the development of social capital. The regression proved no significance for either PE or ME, thus hypothesis 5 is rejected and hypothesis 6 is not rejected. That hypothesis 5 was rejected was expected, since ME refers to an internal perspective and thus do not influence the development of the external construct of SC. Nonetheless, the fact that the regression proved no significance for PE is strange, PE reflect an external perspective and should according to the literature influence the development of the external construct of SC. This may be explained by how auditors interpret PE, since one may argue for both an internal as well as an external perspective. In the context of auditors the professional duties reflect moral philosophies, such as rule deontology (Sylvander, 2015). Rule deontology may be argued to have both an internal as well as an external perspective. This is because in the auditing context rule deontology include maintaining confidentiality, which is aligned with both the ethical rules of the profession as well as the ethical rules of the firm. Hence, the auditors may have interpret PE as an internal perspective and thus be a reason why the hypothesis is not supported.

6.2.1.2 Discussion of the explorative statistics
To explore how auditors perceive the concepts of BE and IC, factor analysis was made. In this section the factor analysis of BE as well as IC is discussed. The first analysis of BE proved that auditors perceive the concept of BE as being two components, were one is more internal oriented and the other is more external oriented. This indicate that auditors do not separate BE in ME and PE, instead they intertwine ME and PE in internal and external ethics, were internal ethics has a tendency to be more dominant. This may be explained by that auditors
value the reputation and performance of the bureau to a high extent. Auditors are known to be career-oriented, which explains the internal focus in order to advance in the hierarchy.

The second analysis of IC proved that auditors perceive the concept of IC as being two components. The factors were constructed of one component that was heavily loaded on HC and another one that was dominated by OC. This leaves SC, the component that is seen by the research sample as a floating construct between the two factors. Maybe the statements from the questionnaire were hard to relate to, since the SC involves statements that are not directly pointed to the organisation itself; rather they focus on social exchanges with external parties. Thus, it can be harder to properly answer the statement because of this. Another reason why SC would be hard to relate to is because the intellectual capital research is not broadly explored in the audit context. Hence, the auditors may be unfamiliar with the concepts, which can have an effect on the outcome of this study. The factors extracted from the analysis of IC were named *tacit individual capital* and *collective organizational capital*, which means that the knowledge is developed both by the individuals themselves but can also be learned through collective collaboration. The tacit knowledge has constructs of HC that have high emphasis on the individuals’ own learning abilities, skills and creativity. Meanwhile, the OC dominant factor of collective knowledge contains constructs of the organizational capital that the individuals need in order to communicate as a team and as a collective group, such as standards, manuals, databases etc.

**6.2.2 Answer to the research question**

The research question for this study is: *How do managerial and professional ethics of auditors affect the development of intellectual capital in audit firms?* The answer to the research question is that ME and PE do not affect the development of IC as a whole in the context of the audit profession. Nonetheless, this study shows that ME drives the development of HC. This study showed no significant relation between PE and IC.

**6.3 Conclusions**

In the conclusions section, the contributions of the study are presented, along with limitations, self-criticisms, future research opportunities and concluding comments.

**6.3.1 Methodological contributions**

This study further extents the IC literature by combining research on business ethics with intellectual capital as well as theories regarding the context of a profession. Furthermore, examining the relation between business ethics and the under-concepts of IC being; social,
organisational and human capitals in a quantitative manner. The prior quantitative research in the field of intellectual capital has to a large extent used secondary data; such as annual reports and data bases in (Guthrie et al., 2012). Thus, our study methodologically contributes to the field of study by using primary data. The problem with empirical studies based on secondary data is that it may differ from the reality in the specific corporation, field or context (Denscombe, 2009). Secondary data, such as; annual reports or data bases represent final decisions and disclosure, hence not considering the complexities and contradictions that might occur in order to make the disclosures. By collecting primary data using a questionnaire, the study is reflecting the specific population and thus shows an actual picture of the context.

This study contributes methodologically by introducing a new way of measuring the concepts of BE and IC in the context of audit firms. This study found that auditors perceive both BE and IC in a different way than previous studies, where BE includes an internal as well as an external perspective and IC include the under-concepts of tacit individual capital and collective organizational capital. This study represents one of few studies examining the relation between BE and IC in the context of the audit profession. We hope that more studies will be conducted in the area in the further to further strengthening the relationships.

6.3.2 Ethical contributions

This study has addressed the question of how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms. The results of the study indicate that professional and managerial ethics are closely interlinked, however this study only found a relation between intellectual capital and reliance on managerial ethics. This study develops the understanding of the relation between business outcomes and business ethics, which and shows the importance of business ethics in the auditing context. By understanding the relation between business ethics and business outcomes, may audit firms enhance their performance in many different levels and areas, for instance through eliminating discriminations and providing better working conditions. This could be done through establishing an ethical environment where the employees will be comfortable in their everyday work. Furthermore, it will contribute to the relation with customers, since ethical behaviour and choices will refuse the auditors to cheat the customers through giving faulty or harmful services. In addition, it will contribute to the actions towards the society as a whole, by developing services that are aligned with the needs of the society and developing a balance among stakeholders as well as avoiding environmental damage.
6.3.3 Theoretical contributions
The theoretical contribution of this study is a renewed and enhanced understanding of the relationship between business ethics in the audit profession and the development of intellectual capital in audit firms within a Swedish context. Due to, the lack of studies with the aim of exploring the relationship between BE and IC in the context of auditors, this study contributes to the previous research and enlarges the understanding of the subject in hand. The relation between BE and IC has already been studied and established in the previous research, however this study focus on the specific context of auditors. Previous studies have conceptualized BE as a general concept (e.g. Hwan-Yann, 2014; Hunt, Wood, & Chonko, 1989) which is oversimplified, especially in the context of professions. This is because professions have a duality; facing both the ethical values of the profession as well as the ethical values organization. Thus, this study theoretically contribute to hoe BE is conceptualized in the audit profession and furthermore how the managerial ethics as well as the professional ethics influence the development of IC.

6.3.4 Practical contributions
As for practical contribution, this study provides audit firms and the audit profession as a whole insight on how BE is related with the development of IC. Furthermore, this study draws the practitioner’s attention to the relation between business ethics and Intellectual capital. Thus, putting the ethical values in the audit firms in the spotlight, this should be done throughout whole firms starting from the top management, showing the tone from the top. In a knowledge intense profession one should raise the awareness of the importance of intellectual capital, which can influence the performance of the firm in a long-term perspective, rather than focus upon physical resources and short-term financial performance.

The findings of this study provide empirical evidence supporting the idea of a relation between business ethics and organizational outcomes. Business ethics is a concept that can be used in order to attract good talent, improve corporate image and establish an ethical and trustworthy culture and a positive environment for communication, collaboration and creative product development

6.3.5 Limitations and self-criticism
The aim of the study is to explain how managerial and professional ethics of auditors affect the development of intellectual capital in audit firms. However, there are some limitations to consider. Firstly, the sample of this dissertation does not contain every auditor in Sweden.
Instead, our sample consists of the Swedish authorised auditors, i.e. the Supervisory Board of Public Accountants in Sweden. Nonetheless, the sample was chosen because it gives a good view of the population and since it has been used by various researchers before (e.g. Broberg 2013; Sylvander, 2015).

Secondly, a triangulation of empirical methodologies would have enhanced the reliability of the study (Denscombe, 2009). For instance, the dissertation could have included interviews in order to understand the phenomena more deeply. However, due to time limitations and practical reasons a triangulation of empirical methodologies was difficult to implement and thus interviews were not an option in this study.

Thirdly, the study contains few factors (i.e. independent variables) that influence the development of IC. This is arguably both positive and negative. On one hand, one may have missed some important factors that develop IC. But on the other hand, the study examines the factors thoroughly in order to really understand them.

Fourthly, there are only three to five questions that are linked to each factor. However, the Cronbach’s Alpha values (all above .7) indicate that these are adequate in order to give a reliable quantitative analysis. Also, more questions would have given more burdens to the recipients, and we know that auditors have a heavy work load during this time of the year. Therefore, limiting the number of questions was utterly important for us.

6.3.6 Future research
Although this study makes several important contributions, there are limitations that require future research. Firstly, the sample of this study is auditors listed at Supervisory Board of Public Accountants. Further research with sampling from different industries and sectors should extend and improve applicability to other contexts.

Secondly, the questionnaire survey in this study uses cross-sectional survey to collect data. Further research can use longitudinal research to explore how business ethics influence the development of IC over time. In addition, it would be of interest to conduct a qualitative study based on interviews in order to achieve more deep and extensive data.

Thirdly, this study indicates that auditors are influenced by both internal and external ethical values, where the internal aspect is dominating. Further studies that explore how these ethical values influence the development of organizational outcomes would be of interest.
Fourthly, Auditors seem to perceive IC as two components and not as three which is the common way to conceptualize IC in previous research. Further studies exploring the concept of IC in the context of auditor would be of interest.

6.3.7 Concluding comments
This study provide interesting findings of how BE is related towards the development of IC in audit firms. Furthermore, it also provides new insights of how both BE and IC can be perceived by auditors. We as authors hope that this research will inspire others to try making sense of the complexity of the relation between BE and IC in audit firms. Hopefully, further studies will get better answer rates than this study.
References


Sylvander, J. (2015). The development of the Auditor Managerial Ethical Profile Scale. EAA, (pp. 1-35).


Appendix 1. Questionnaire

Hi!

We are two business students at Kristianstad University. This survey is a part of our master level dissertation, where the aim of the study is to explain how managerial and professional ethics of auditors affect intellectual capital in audit firms.

The survey is directed towards the auditor’s at all hierarchal positions.

We would be very thankful if you have the time and possibility to answer the survey, which is calculated to take not more than five minutes. All information provided will be treated confidentially.

Thank you for your participation! Your answers are important to our dissertation.

Kind regards,

Dennis Tran and Olle Schultz

You are welcome to contact us if there are any questions.

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Background questions

1. I am: Man or Woman
2. I was born: ____
3. How many years have you been working at the firm: ____
4. How many years have you been in the branch: ____
5. Partner: Yes or No
6. How many assignments have you been involved in during the last six months? (number)
7. How many assignments have you been involved in during the last six months as a signing auditor? (number)

Hereafter follows some statements. Please indicate until which extent the statements are true on your bureau/office.

Explanation of the scale 1= Do not agree at all 10= totally agree

Intellectual Capital

Organisational Capital (inspired by Youndt et al., (2004))
8. Our organization's collective knowledge continuously developed through the use of internal information such as manuals, databases, etc.
9. Our organization is developing an organizational culture that contributes to the firm’s value creation by creating valuable ideas, unique business processes, etc.
10. Our organization is continuously developing its knowledge and information through the structures, systems and processes.

Human Capital (inspired by Youndt et al., (2004))
11. Our employees are continuously developing The cooperation within the Agency by exchanging ideas, share information and learn things from each other
12. Our employees are continuously developing their knowledge in order to be qualified for their tasks
13. Our employees are continuously developing their knowledge to be experts in their specific work and function.
14. Our employees are continuously developing their creativity to create smart solutions.
15. Our employees are continuously developing new abilities and skills.

Social capital (inspired by Youndt et al., (2004))
16. The firm is continuously developing various external collaborations to enhance the problem solving ability of the employees.
17. The firm develops and improves professional network.
18. The firm actively shares information and knowledge with external partners and learn from others.
19. The firm is continuously developing relationships with their clients to create long-term value.

**Business ethics**

Please indicate how important the following factors are in your everyday decisionmaking on the bureau/office:

Explaination of the scale 1= Do not agree at all 10= totally agree

Managerial duties (inspired by Sylvander (2015))

20. My decisions do not harm third parties
21. My decisions do not harm clients
22. My decisions do not harm the Agency's reputation
23. That I create value for all our stakeholders by following the Agency's regulations
24. That my decision protects the profession's reputation

Professional duties (inspired by Sylvander (2015))

25. I always maintain confidentiality
26. I comply with the law, in that it benefits society as a whole
27. I do not violate the professional and ethical codes.
28. My decisions do not reduce the profession's credibility
Appendix 2. Questionnaire (translated into Swedish)

Hej!

Vi är två studenter som studerar ekonomi med inriktning redovisning/revision vid Högskolan Kristianstad.

Vi skriver just nu en uppsats på magisternivå där syftet är att utforska hur revisorer uppfattar utvecklandet av det intellektuella kapitalet på revisionsbyråer.

Vi skulle vara mycket tacksamma om du har möjlighet att besvara enkäten som beräknas ta cirka fem minuter. Era svar behandlas konfidentiellt.

Tack på förhand för din medverkan! Dina svar är viktiga för vårt arbete.

Med vänliga hälsningar:

Dennis Tran och Olle Schultz

Vid frågor är ni välkomna att kontakta oss på antingen mail eller via telefon.

dennistran@live.se olleschultz@hotmail.com

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Kontaktuppgifter till handledare:

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Johanna Sylvander, universitetsadjunkt i företagsekonomi

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Bakgrundsfrågor

20. Jag är: Man eller Kvinna
21. Jag är född: _____
22. Hur många år har du arbetat på byrån: _____
23. Hur många år har du arbetat inom branschen: _____
24. Partner Ja eller Nej
25. Ungefär hur många revisionsuppdrag har du varit involverad i (inkl. som påskrivande revisor) under de senaste sex månaderna? (antal)
26. Ungefär hur många revisionsuppdrag har du varit påskrivande revisor för under de senaste sex månaderna? (antal)

Nedan följer ett antal påståenden. Ange till vilken grad du anser att påståendet stämmer in på din byrå/din arbetsplats.

Förklaring av skalan 1= Instämmer inte alls 10= Instämmer helt

Intellektuellt kapital

Social Capital (inspirerat av Youndt et al. (2004))

27. Byrån utvecklar kontinuerligt olika externa samarbeten för att förhöja problemlösningsförmågan hos de anställda.
28. Byrån utvecklar och förbättrar kontinuerligt professionella nätverk.
29. Byrån delar aktivt med sig av information och kunskap med externa parter och tar lärdom av andra.
30. Byrån utvecklar kontinuerligt relationen till sina klienter för att skapa ett långsiktigt värde.

Organisational Capital (inspirerat av Youndt et al. (2004))

31. Vår organisations kollektiva kunskap utvecklas kontinuerligt genom användandet av interna informationssystem såsom manueraler, databaser etc.
32. Vår organisation utvecklar en organisationskultur som bidrar till byråns värdeskapande genom att skapa värdefulla idéer, unika företagsprocesser etc.
33. Vår organisation utvecklar kontinuerligt dess kunskap och information genom strukturer, system och processer.

Human Capital (inspirerat av Youndt et al. (2004))

34. Våra anställda utvecklar kontinuerligt samarbetet inom byrån genom att utbyta idéer, dela information och lära sig saker av varandra
35. Våra anställda utvecklar kontinuerligt sin kunskap för att vara kvalificerade för sina arbetsuppgifter
36. Våra anställda utvecklar kontinuerligt sin kunskap för att vara experter inom deras specifika arbete och funktion.
37. Våra anställda utvecklar kontinuerligt sin kreativitet för att skapa smarta lösningar.
38. Våra anställda utvecklar kontinuerligt nya förmågor och kunskaper.

**Business ethics**

Vänligen ange hur viktiga följande faktorer är i ditt dagliga beslutsfattande på byrån:

Förklaring av skalan 1= Inte viktigt alls 10= Extremt viktigt

**Managerial duties (inspirerat av Sylvander (2015))**

39. Att mina beslut inte skadar tredje part
40. Att mina beslut inte skadar klienter
41. Att mina beslut inte skadar byråns rykte
42. Att jag skapar mervärde för alla våra intressenter genom att följa byråns regelverk
43. Att mina beslut skyddar professionens rykte

**Professional duties (inspirerat av Sylvander (2015))**

44. Att jag alltid upprätthåller tystnadsplikten
45. Att jag följer gällande lagstiftning i och med att det gynnar samhället
46. Att jag inte bryter mot de professionella och etiska koderna.
47. Att mina beslut inte minskar professionens trovärdighet
### Appendix 3. Correlation matrix

<table>
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<th>Variables</th>
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<td>0.144</td>
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<td>7 AssignSign</td>
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<td>0.697**</td>
<td>0.810**</td>
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</table>

** p < 0.01
* p < 0.05
† p < 0,