Effective Communication between Internal Audit and the Board and Senior Management

D I S S E R T A T I O N
of the University of St.Gallen,
School of Management,
Economics, Law, Social Sciences
and International Affairs
to obtain the title of
Doctor of Philosophy in Management

submitted by

Katharina Schramm

from

Germany

Approved on the application of

Prof. Flemming Ruud, PhD

and

Prof. Dr. Michèle F. Sutter-Rüdisser

Dissertation no. 4918

D-Druck Spescha, St. Gallen 2019

The University of St.Gallen, School of Management, Economics, Law, Social Sciences and International Affairs hereby consents to the printing of the present dissertation, without hereby expressing any opinion on the views herein expressed.

St.Gallen, May 27, 2019

The President:

Prof. Dr. Thomas Bieger

With my sincere gratitude to Prof. Flemming Ruud, PhD and Prof. Dr. Michèle F. Sutter-Rüdisser, without whom this dissertation would not have been possible.

Table of contents

Abstract

In this thesis, the *constituents*, *antecedents* and *outcomes* of effective communication between internal audit and its key stakeholders, the board of directors and senior management, were analyzed for organizations based in Switzerland. As the *Third Line of Defense* for effective risk management and internal control, internal audit ideally has a dual reporting relationship in terms of a functional reporting line to the board and an additional administrative reporting line to senior management. This unique organizational position, in addition to its mandate to add value to the organization, endows internal audit with the possibility to reduce information asymmetries for the board and to improve the decision-making capability of its key stakeholders through effective upward communication. In turn, also internal audit relies on effective downward communication from its key stakeholders to align its work with the strategic and control-related needs of the organization. Consequently, effective communication between internal audit and the board and senior management should be designed as a continuous and feedback-oriented process that is characterized by vertical information flowing bottom-up from internal audit as well as top-down from the board and senior management. To empirically investigate the research phenomenon, a *mixed methods strategy* was applied in which the data obtained through an online survey from 113 internal auditors were evaluated using hierarchical multiple regression analysis, path analysis as well as qualitative content analysis. The empirical results confirmed that the communication quality criteria defined by the professional body for internal audit were regarded as the main *constituents* of effective communication. It could likewise be shown that with respect to the *antecedents*, the perceived behavioral control of internal auditors regarding the communication process was the most significant predictor for effective communication with the board, whereas an organizational culture that supported the mandate of internal audit was pivotal for effective communication with senior management. Another central *antecedent*, which was identified during the qualitative analysis, was mutual trust. With regard to the *outcomes*, effective downward communication was found to have a positive influence on the value added by internal audit. Further relevant *outcomes* included, amongst others, a better working relationship between internal audit and its internal stakeholders and more effective risk management.

Zusammenfassung

In der vorliegenden Arbeit wurden die Bestimmungsfaktoren, Voraussetzungen und Folgen wirksamer Kommunikation zwischen dem Internen Audit und seinen zentralen internen Anspruchsgruppen, dem Verwaltungsrat und der Geschäftsleitung, in Schweizer Organisationen untersucht. Im Idealfall besitzt das Interne Audit als sogenannte dritte Verteidigungslinie eine doppelte Berichterstattung mit einer funktionalen Berichterstattungslinie an den Verwaltungsrat und einer zusätzlichen administrativen Berichterstattungslinie an die Geschäftsleitung. Diese besondere organisationale Stellung verbunden mit der Mission, den Wert der Organisation zu schützen und zu erhöhen, gibt dem Internen Audit die Möglichkeit, etwaige Informationsasymmetrien abzubauen und seinen internen Anspruchsgruppen durch wirksame Kommunikation zu einer verbesserten Entscheidungsfindung zu verhelfen. Darüber hinaus ist auch das Interne Audit auf eine wirksame Kommunikation seitens des Verwaltungsrats und der Geschäftsleitung angewiesen, um sein Mandat erfüllen zu können. Aus diesem Grund soll die Kommunikation zwischen dem Internen Audit und seinen internen Anspruchsgruppen als kontinuierlicher und feedbackorientierter Prozess gestaltet sein. Für die empirische Untersuchung wurde ein Mixed-Methods-Ansatz angewendet, bei dem die durch eine Onlineumfrage gewonnenen Daten von 113 teilnehmenden Internen Auditoren mittels einer Regressionsanalyse, einer komplementären Pfadanalyse sowie einer qualitativen Inhaltsanalyse ausgewertet wurden. Die vom Berufsverband des Internen Audits festgelegten Qualitätskriterien wurden durch die empirischen Ergebnisse als Bestimmungsfaktoren wirksamer Kommunikation bekräftigt. Weiterhin wurde die wahrgenommene Verhaltenskontrolle der Internen Auditoren als Voraussetzung für wirksame Kommunikation mit dem Verwaltungsrat bestätigt, während für wirksame Kommunikation mit der Geschäftsleitung eine das Interne Audit unterstützende Unternehmenskultur am meisten ausschlaggebend war. Eine weitere Voraussetzung, welche im Rahmen der qualitativen Analyse identifiziert wurde, war das Vertrauensverhältnis zwischen dem Internen Audit und seinen internen Anspruchsgruppen. Als Folgen wirksamer Kommunikation konnten unter anderem ein höherer Mehrwert des Internen Audits, eine verbesserte Arbeitsbeziehung zwischen dem Internen Audit und seinen internen Anspruchsgruppen sowie ein effektiveres Risikomanagement hervorgehoben werden.

List of abbreviations

2SLS	Two-Stage-Least-Squares
Adj.	Adjusted
B	Unstandardized Beta
Bca	Bias-corrected accelerated
CAE	Chief Audit Executive
CBOK	Common Body of Knowledge
CCO	Chief Compliance Officer
CCSA®	Certification in Control Self-Assessment®
CEO	Chief Executive Officer
CFE®	Certified Fraud Examiner®
CFI	Comparative Fit Index
CFO	Chief Financial Officer
CFSA®	Certified Financial Services Auditor®
CGAP®	Certified Government Auditing Professional®
CI	Confidence interval
CIA®	Certified Internal Auditor®
CISA®	Certified Information Systems Auditor®
CO	Code of Obligations
COSO	Committee of the Sponsoring Organizations of the Treadway Commission
CRMA®	Certification in Risk Management Assurance®
CRO	Chief Risk Officer
CVF	Competing values framework
Df	Degrees of freedom
ECIIA	European Confederation of Institutes of Internal Auditing
E.g.	Exempli gratia (Latin for: “for example”)
Extr.	Extraction
FAOA	Federal Audit Oversight Authority
FERMA	Federation of European Risk Management Associations
FINMA	Swiss Financial Market Supervisory Authority
H	Hypothesis

IA	Internal audit
IAF	Internal audit function
I.e.	Id est (Latin for: “in other words” or “this means”)
IIA	Institute of Internal Auditors
IIARF	Institute of Internal Auditors Research Foundation
IIAS	Institute of Internal Auditors Switzerland
IPPF	International Professional Practices Framework
ISA	International Standards on Auditing
KMO	Kaiser-Meyer-Olkin Measure
N	Number
N.a.	Not applicable
NFI	Normed Fit Index
OECD	Organization for Economic Cooperation and Development
PCA	Principal component analysis
PwC	PricewaterhouseCoopers
QAIP	Quality Assurance and Improvement Program
QIAL®	Qualification in Internal Audit Leadership®
RMSEA	Root Mean Square Error of Approximation
RQ	Research question
SD	Standard deviation
SE	Standard error
Sig.	Significance
SMCR	Sender-Message-Channel-Receiver
SOX	Sarbanes-Oxley Act
SVIR	Schweizerischer Verband für Interne Revision, see as well: IIAS
Swiss Code	Swiss Code of Best Practice for Corporate Governance
VIF	Variance inflation factor

List of figures

List of tables

1 Introduction

"Human communication has always been central to organizational action."
(Yates & Orlikowski, 1992, p. 299)

The importance of effective communication between internal audit and the board and senior management as its key stakeholders has been strongly suggested by researchers and by the internal audit professional body, the Institute of Internal Auditors (IIA), for several years. Against this background, this thesis investigated the communication between internal audit and the board and senior management within the context of organizational value creation and effective governance. To familiarize the reader with the topic as well as with the methodology and structure of the thesis, this chapter serves to clarify key terms, outline the research phenomenon and its practical relevance, elicit the current state of knowledge, derive three specific research questions, illustrate the methodological approach and finally convey the thesis' outline and scope.

1.1 Central concepts and definitions

In the following, the terms *communication*, *effectiveness*, *internal audit*, *key stakeholders* and *organization* are explained because they represent the key concepts of this thesis and are useful to understand because they reoccur many times throughout the entire thesis.

1.1.1 Communication

The first term that is clarified is *communication,* which stems from the Latin word *communicare* and has several meanings, amongst which are "to share", "to join", "to link", "to connect" and "to make common". Based on this etymological origin, communication might refer to anything that brings something or someone together or that shares something with others. Today, the term communication is normally used to describe the transfer of information through words or other means (e.g. through body language).

The Committee of the Sponsoring Organizations of the Treadway Commission (COSO) (2013) defined communication accordingly as "the continual, iterative process of providing, sharing and obtaining necessary information" and as "the means by which

information is disseminated throughout the organization, flowing up, down, and across the entity" (Executive Summary, p. 5). In this COSO definition, it already becomes apparent that communication in the organizational context affects all hierarchies and can assume different directions.

Since communication is indispensable in organizations, previous researchers tried to evaluate the mechanisms behind communication and focused on how it can create value for the sender and the receiver of the information. For example, Welch and Jackson (2007) asserted that "effective internal communication is crucial for successful organizations as it affects the ability of strategic managers to engage employees and achieve objectives" (p. 177). Communication was further found to be an essential part of enterprise risk management because risk management necessitates a "continual process of obtaining and sharing necessary information, from both internal and external sources, which flows up, down, and across the organization" (COSO, 2017, Executive Summary, p. 6). Also in terms of internal control, communication "is necessary for the entity to carry out internal control responsibilities to support the achievement of objectives" (COSO, 2013, p. 5).

1.1.2 Effectiveness

A second relevant term is *effectiveness*. Effectiveness stems from the Latin adjective *effectivus*, which means "accomplished" or from the verb *efficere*, which signifies "to produce" or "to achieve". With regard to internal audit effectiveness, Mihret and Yismaw (2007) emphasized that it is "the extent to which an internal audit office meets its raison d'être" and that "internal audit is effective it if meets the intended outcome it is supposed to bring about" (p. 471; Mihret et al., 2010). Dittenhofer (2001a) defined effectiveness in general as "the achievement of goals and objectives using the factor measures provided for determining such achievement" (p. 445) while Quinn and Rohrbaugh (1983) stated that organizational effectiveness "must contend with the question of organizational means and ends" (p. 370). For this thesis, organizational effectiveness was hence understood as the extent to which predetermined objectives are reliably achieved.

1.1.3 Internal audit

Since this thesis assumed the perspective of internal auditors, it is paramount to understand what "internal audit" or "internal auditing" means. The official *Definition of Internal Auditing* by the IIA (2017), which is in effect unchanged since 1999, reads:

> "Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes."

The core characteristics of internal auditing are consequently *independence*, *objectivity*, *assurance services*, *consulting services*, *to add value*, *improve an organization's operations*, *to help accomplish objectives*, *systematic and disciplined approach* as well as the evaluation and improvement of the effectiveness of *risk management*, *control*, and *governance processes*. Since internal audit may not always be established as an independent function, the IIA acknowledges that internal audit can also be an "internal audit activity" in terms of a "department, division, team of consultants, or other practitioner(s)" as long as it otherwise fulfills the requirements of the *Definition of Internal Auditing* (IIA, 2017). To be concise and to consider both internal audit functions and activities equally, the general expression "internal audit" was used whenever possible.

1.1.4 Key stakeholders

In line with Kyburz (2016), the board and senior management are referred to as the *key stakeholders* of internal audit. Although there are even more internal stakeholders than the board and senior management such as operational management or the functions and activities of the *Second Line of Defense*, the board and senior management can be considered as the most important internal stakeholders due to their dual reporting relationship with internal audit.

1.1.5 Organization

In this thesis, it is frequently referred to *organizations* instead of *companies* or *firms* because the former is the broader term and includes the two latter terms. *Oxford Dictionary*[1] thereby defines an organization as "an organized group of people with a particular purpose", whereas a company is simply a commercial business and a firm is defined as "a business concern, especially one involving a partnership of two or more people". Consequently, the term organization applies also to the public sector, which was likewise included in the empirical analysis.

1.2 Research phenomenon

What does effective communication between internal audit and the board and senior management mean from the perspective of internal audit practitioners? What are the factors that promote effective communication? How can effective communication between internal audit and its key stakeholders, the board and senior management, contribute to effective governance?

In order to address these questions and to understand the significance of effective communication between internal audit and its key stakeholders, one must first comprehend why and how exactly internal audit is associated with corporate governance and how effective internal communication can be an indispensable tool for internal audit, the board and senior management to add value to the organization.

The IIA suggested that internal audit adds value to the organization and hence implicitly also to effective corporate governance. Besides the *Definition of Internal Auditing,* the *Mission* of internal audit, which is also part of the mandatory elements of the *International Professional Practices Framework* (IPPF), postulates that internal audit must "enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight" (IIA, 2017). Following this, internal audit can be regarded as a value adding function or activity that should be evaluated by the benefit that it is able to contribute to the organization.

[1] www.oxforddictionaries.com

Supporting the understanding of Ruud (2003), Coram et al. (2008) put forward that a "crucial part of an entity's corporate governance is its internal audit function" (p. 543). Likewise, Christopher et al. (2009) determined that internal audit "has been promoted as the cornerstone upon which effective corporate governance is built" (p. 201) while Arena and Azzone (2009) stated that internal audit "has recently gained high attention due to its links with the internal control-risk management system" (p. 54). Sarens (2009) even put forth a bold rhetorical question, asking: "When can we talk about an effective IAF[2]? In theory, the answer should be: When IAF quality has a positive impact on the quality of corporate governance" (p. 1).

Despite these acknowledgements, which were recently once again underpinned by Eulerich and van Uum (2017), the actual value added of internal audit is not sufficiently determined yet. In fact, the exact contribution of internal audit has remained so unclear that the matter has led to ongoing discussions between the IIA and academics that widened the "rhetoric gap" between what standard setters and stakeholders expect and what internal audit is actually able to achieve (Spira & Page, 2003). Lenz and Sarens (2012) noted accordingly that there is still a "lack of congruence in understanding among stakeholders concerning what makes IA[3] a value-added activity" (Lenz & Sarens, 2012, p 535; Flesher & Zanzig, 2000). It was also highlighted that "the usefulness of internal auditing has yet to be demonstrated, since we do not know what role the IAF actually performs" (Roussy, 2013, p. 551; Archambeault et al., 2008). This lack of clarity presents a risk to the profession in so far that internal audit may become marginalized in the corporate governance debate altogether.

Meanwhile, effective communication has generally been substantiated as an important lever for internal audit and governance effectiveness. Not only did the COSO Internal Control – Integrated Framework (2013) convey that information and communication is an integral internal control component throughout the entire organization but also many researchers linked effective communication with beneficial organizational outcomes. For example, Lenz and Hahn (2015) asserted that because "internal auditors typically impact organizations through others, communication and influencing skills are instru-

[2] Note by the author: IAF is short for internal audit function.
[3] Note by the author: IA is short for internal audit.

mental" (p. 17). Besides, the role of internal audit for effective communication was associated with ensuring the integrity of information flows by "monitoring all internal systems which generate information – internal control, risk identification and assessment, management and communication processes, and the provision of timely advice to management and the board" (Leung et al. 2003, p. 7). Consequently, effective communication represents a central means through which internal audit can add value to the organization and contribute to effective governance. Effective internal communication between internal audit and the board and senior management is especially relevant in larger organizations with many hierarchical levels because they are more prone to information asymmetries and their systems of direction and control are more difficult to align (Fama & Jensen, 1983; Jensen & Meckling, 1976).

Specifically, downward communication that is initiated by the board and senior management helps the risk management and internal control functions and activities to stay informed about the organizational strategy and to focus their work on the processes and risks that are critically associated with the achievement of the organization's objectives. Conversely, upward communication that is initiated by internal audit might assist the board and senior management in terms of being adequately informed about the effectiveness of the risk management and internal control systems. Without this kind of vertical exchange, the board might be informationally far removed from the operational tasks and be unaware about hierarchically dispersed, yet crucial information (Willem & Buelens, 2009; Bogenrieder & Nooteboom, 2004; Jensen & Meckling, 1992). In fact, effective upward communication from internal audit might be even more important for the board than for senior management because, according to the *Three Lines of Defense* model, senior management tends to have more direct risk- and control-related information sources.

Due to its organizational embedding with a direct reporting line to the board, internal audit assumes a special role for reporting risk and control-related information in an effective manner. IIA Standard 2110 – *Governance* affirms this by illustrating that internal audit "must assess and make appropriate recommendations to improve the organization's governance processes for (…) communicating risk and control information to appropriate areas of the organization" and for "coordinating the activities of, and communicating information among, the board, external and internal auditors, other assurance providers, and management" (IIA, 2017).

In the light of these considerations, the research phenomenon can be summarized as dealing with how internal audit, given its special mandate and organizational embedding, may use effective communication with its key stakeholders in the most value generating manner for the organization.

1.3 Practical relevance

Underscoring the practical relevance of the research phenomenon, many recent practitioner studies assessed either the role of internal audit for effective governance or the importance of effective communication. According to the latest CBOK study from 2015, internal audit's contribution to assuring the effectiveness of the internal control and risk management systems were the areas in which 2,641 Chief Audit Executives (CAEs) identified the greatest value added of internal audit in their organizations. Then, assurance was regarded as even more value adding than advising and informing management or the audit committee (Seago, 2015).

Figure 1: Value added of internal audit tasks[4]

[4] Adapted from Seago (2015).

However, the latest *Enquete* from 2017 pointed towards the increasing relevance of supporting the board, respectively the audit committee, senior management and corporate governance. The *Enquete* is an encompassing survey about the practice of internal auditing that is conducted regularly on behalf of the German, Austrian and Swiss national representations of the IIA. The study comprised the evaluations and opinions of 415 CAEs, including 276 respondents from Germany, 79 respondents from Austria and finally 60 respondents from Switzerland. Amongst other aspects, the results emphasized the importance of internal audit for contributing to effective corporate governance, showing that this task gained in significance by an astounding 11.7 % compared to 2014. Similarly, supporting senior management, the board and the audit committee subjectively became even more central responsibilities for internal auditors. Although providing assurance of the risk management and internal control systems remained relevant, the internal audit tasks concerning corporate governance witnessed the most considerable positive change. A translated summary of the survey results is presented in the following.

Table 1: Importance of internal audit tasks[5]

	Importance in 2017	**Importance in 2014**	**Δ**
	Measured on a scale of 1 "does not apply" to 5 "does apply"		In %
Supporting senior management	4.47	4.39	1.8
Supporting the board or the audit committee	3.44	2.79	23.3
Supporting corporate governance	3.82	3.42	11.7
Assurance concerning the effectiveness of the internal control system	4.34	4.50	-3.6
Assurance concerning external compliance	4.23	4.22	0.2
Assurance concerning internal compliance	4.46	4.46	0.0
Assurance concerning the effectiveness of risk management	3.80	3.86	-1.7
Assurance concerning the effectiveness of compliance management systems	3.71	3.46	7.2
Assurance concerning profitability and efficiency of operations	3.83	3.74	2.4
Fraud prevention/fraud detection	3.76	3.54	6.2
Safeguarding of assets	3.75	3.75	0.0
Improvement of profitability and efficiency of operations	3.75	3.74	0.3
Preparation of high-potentials for expert and leadership positions	2.27	2.07	9.7

The fact that the *Enquete* (2017) portrayed the support of the board and senior management as a significant internal audit task suggests the necessity of nourishing close and trustful working relationships in which internal audit is ideally seen as a *Trusted Advisor* by the board and senior management.

Addressing the *Trusted Advisor* debate, PricewaterhouseCoopers (PwC) conducted their yearly comprehensive *State of the Internal Audit Profession Study* in 2017 that included the responses of 1,892 executives, of which 58 % were leaders in internal audit and the remaining 42 % either were members of the board or formally belonged to senior management. PwC uncovered that while in 2015, 55 % of the respondents stated that they desired internal audit to be a *Trusted Advisor*, only a mere 9 % considered internal audit to have actually achieved this status by 2017. In addition, in stark contrast to the study of the previous year in which 54 % of the respondents considered that they received

[5] Adapted from Eulerich (2017).

significant value from internal audit, only 44 % agreed to the same statement in the 2017 survey. PwC also found that "half of the stakeholders who already receive significant value from internal audit indicate that they still expect more value than they are currently receiving", prompting the authors to conclude high "pressure to do more with less" (2017, p. 3). They also noted a distinct "value gap" between what is expected and what internal audit can deliver. According to the authors, these assessments were at "the lowest level in the five years" since PwC began to track these indicators (2017, p. 3).

Besides, also the relevance of effective communication was addressed in several recent practitioner studies for the internal audit profession. In 2018, the IIA published its annual *North American Pulse of Internal Audit Study*, comprising the opinions of 552 CAEs as well as 84 members of senior management. Amongst other aspects, the respondents were asked in which innovation-related tasks their internal audit engaged. Forty percent agreed fully that they were actively seeking new ways to communicate engagement results, another 48 % agreed somewhat. The same study pointed out that a university degree in communication was on the fifth rank in terms of desirable educational backgrounds for internal auditors, only after a degree in accounting and finance, an IT-related degree, a business degree and a technical degree.

The *Seeking Value through Internal Audit Study* (KPMG, 2016), for which over 400 Chief Financial Officers (CFOs) and Audit Committee Chairs were surveyed with regard to the subjective value of their internal audit, conveyed similar implications. The participants of this study identified a greater need for communication skills (67 %) than a need for technology skills (62 %), critical thinking and judgment skills (52 %), understanding of global markets (48 %) or understanding and command of data analytics (39 %). Finally, the latest *Common Body of Knowledge* (CBOK)-Study of the IIA (2015) impressively demonstrated that 52% of the 3,304 participating CAEs considered communication skills as highly desirable when recruiting and training internal auditors, whereby only analytical/critical thinking skills were mentioned slightly more often, namely by 62 % of the respondents.

The selected practitioner studies thus convincingly demonstrated that the role, respectively the value added of internal audit, and the topic of effective communication are currently affecting the profession and worthwhile to investigate in an empirical study.

1.4 Research gap

With regard to corporate governance research, Shleifer and Vishny (1997) pointed to an "enormous practical importance" (p. 737), which is logical considering that governance research normally mirrors the themes that occur in organizational practice (Daily et al. 2003, p. 375). The variety and the diversity of these practical themes led to the emergence of many research substreams that focus on the role of shareholders, the board of directors, executive compensation, international governance including cross-country comparisons and cross-border investments by foreign investors, and the economic aspects of corporate governance (Bebchuk & Weisbach, 2010).

Also the role of internal audit for effective governance became a focal point of researchers' interest over the past years, due to having a "unique position within the organization" and being "an integral component of the corporate governance mosaic" (Soh & Martinov-Bennie, 2011, p. 605; Ruud, 2003). It was argued that internal audit can assist the board in alleviating information asymmetries that may otherwise "limit the effectiveness of board members in the typical large corporation" or adversely impact "the ability of even highly talented board members to contribute effectively to the monitoring and evaluation of the CEO[6] and the company's strategy" (Jensen, 1993, p. 864). In addition, internal audit may support senior management due to providing useful risk-based feedback early on (Sherer & Kent, 1983, p. 103).

Previous research concerning communication in organizations already concentrated on what makes this kind of communication effective or which outcomes are associated with good internal communication. Burke and Wilcox (1969) stated in general that communication "is essential to the functioning of an organization" and for this reason "one of the most important processes of management" (p. 326). Besides, Roberts and O'Reilly (1974a) supported the conceptual link between effective communication and higher-order organizational outcomes, clarifying "the obvious need to relate communication measures to performance criteria" (p. 326). Furthermore, it was previously touched upon that organizations are "dispersed knowledge systems" and that the knowledge must be assimilated, for example through effective communication, in order to be used effectively by the relevant decision-makers (Willem & Buelens, 2009, p. 153; Dessein, 2002;

[6] CEO is short for Chief Executive Officer.

Tsoukas, 1996). Dittenhofer (2001b) appropriately concluded that without effective upward communication, the work of internal audit "is of little value" (p. 461).

Despite these viewpoints, there is still a great "need for research on the implementation of using the IAF as a corporate governance resource by other (…) governance parties" (Gramling et al. 2004, p. 237; Carcello et al., 2011; Sarens, 2009). In addition, there appears to be an existential lack of research regarding the phenomenon of effective communication and its implications for effective governance. Concurring with this, Kyburz (2016) suggested that future internal audit research might "focus in-depth on the content, frequency, and type of communication, with the incorporation of behavioral aspects" (p. 237).

1.5 Research objective

Following the argumentation of the previous sections, this thesis investigated the research phenomenon of effective internal communication between internal audit and the board and senior management and its implications for effective governance. The research objective was to study the factors that *constitute*, *antecede* and *result* from this kind of effective communication. The research objective was further broken down into three distinct research questions (RQ), which are presented below:

RQ1:	Which *constituents* does effective communication between internal audit and the board and senior management have?
RQ2:	Which *antecedents* does effective communication between internal audit and the board and senior management have?
RQ3:	Which *outcomes* does effective communication have for internal audit, the board and senior management and for corporate governance?

The first research question is rather exploratory in nature while the second and third research questions are both exploratory and confirmatory. Due to their confirmatory element and the fact that there are sufficiently mature management theories to substantiate empirically testable hypotheses, the second and third research questions were analyzed quantitatively as well as qualitatively, whereas the first research question was analyzed in a qualitative fashion only. A short overview of the methodological approach is provided in the following section.

1.6 Research methodology

The research methodology has to be embedded in the scientific worldview, whereby the researcher can adopt either the *natural science view* or the *human science view*. The *natural science view* postulates that science needs to be exact, to measure observations precisely and to use well-established theories to predict certain results. Researchers operating under the *natural science model* therefore prefer clear rules for deriving hypotheses from general theories and for empirical testing with standardized measurement instruments. The *human science view,* by contrast, assumes that knowledge cannot be precise due to the complexities of human interaction. Researchers that operate under the human science model attempt to understand a phenomenon holistically but at the cost of more imprecise measurement. (Cartwright & Montuschi, 2014; Risjord, 2014; Benton, 2001) Since the field of internal audit research is characterized by an *intermediate* maturity of existing theory, Edmondson and McManus (2007) suggested combining the *natural* and the *human science view* into a hybrid research approach, which includes confirmatory and exploratory, deductive and inductive, quantitative and qualitative elements simultaneously.

Confirmatory research is based on existing theory and narrows it down to hypotheses, whereas *exploratory research* begins with the specific dataset and subsequently draws generalized implications or even develops new theory. *Confirmatory research* starts with the general and proceeds to the specific while using rigorous quantitative methods in line with the *natural science model*. The rationale is reversed for *exploratory research*, which tends to work more with qualitative data in accordance with the *human science view.* By combining the two research approaches, their advantages and disadvantages can be leveraged, resulting in a more holistic, both positivist and interpretive analysis of the research phenomenon. Such a "combination of methodologies in the study of the same phenomenon" further contributes to validate and extend the interpretation of the results (Denzin, 1978, p. 291). The paradigm emphasis in the present study was placed on the quantitative analysis, complemented through qualitative insights.

The data were collected in June 2018 through a cross-sectional online survey. The survey questionnaire was sent out to 421 internal auditors whose organizations are based in Switzerland, of which 122 addressees replied. The empirical analysis was conducted with a final sample of 113 respondents after adjustments. For the quantitative analysis,

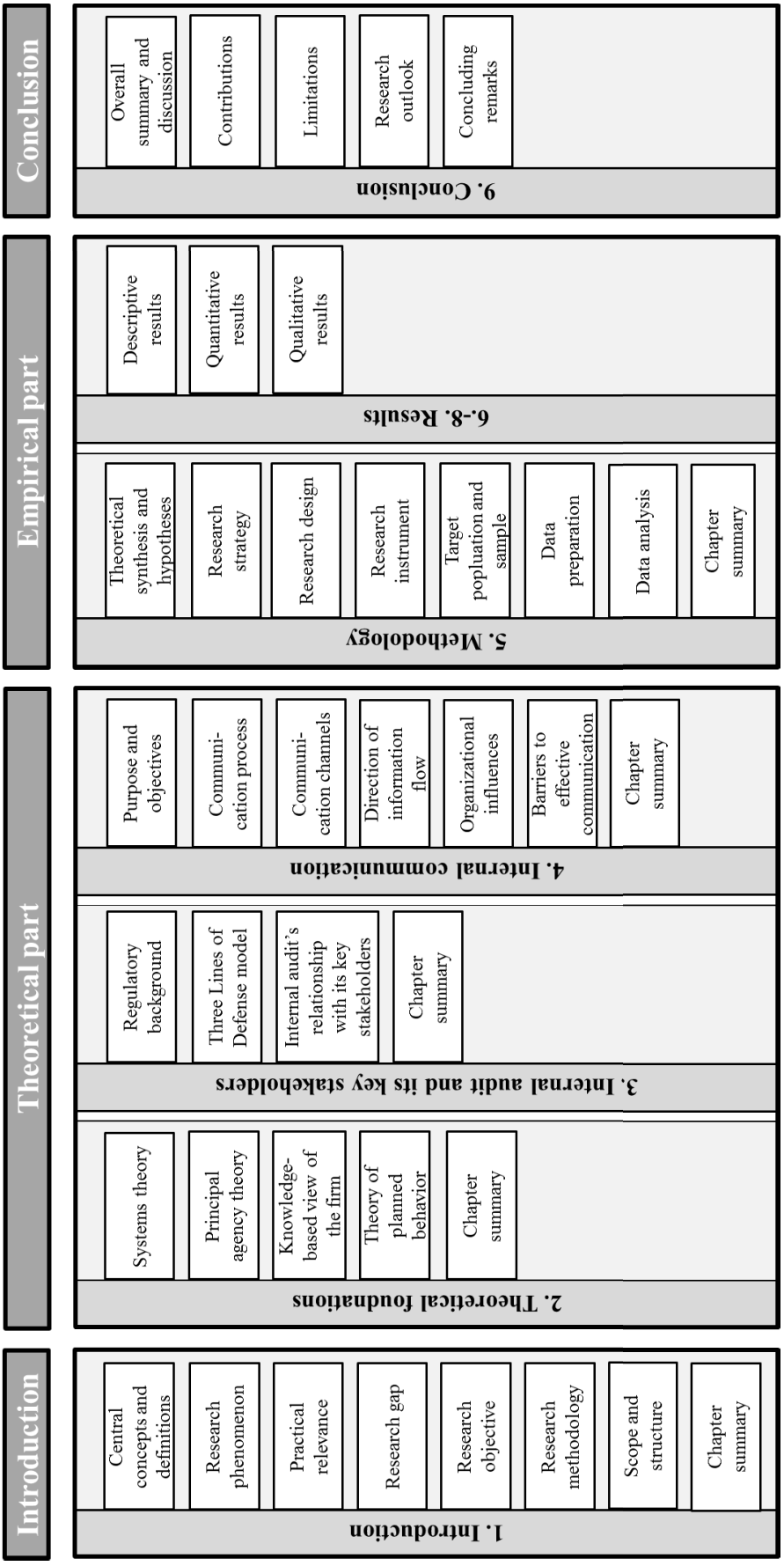
the hypotheses that were theoretically derived in the fifth chapter were tested through applying hierarchical multiple regression analysis and a complementary path analysis. In addition, the qualitative data were evaluated through content analysis and *open*, *axial* and *selective coding*.

1.7 Scope and structure

The scope of the thesis was limited to the analysis of the research phenomenon in Swiss organizations in order to obtain homogenous responses from internal auditors facing similar governance contexts and comparable regulatory requirements. Since not all internal auditors are able to assess the communication with the board and senior management, only current or former CAEs, their deputies or otherwise leading internal auditors were surveyed and the perspectives of the board and senior management were intentionally excluded from the analysis.

Besides an introduction in chapter 1 and a conclusion in chapter 9, the thesis is structured into a theoretical part and an empirical part, whereby each of the two parts consists of several chapters. The theoretical part, from chapter 2 to chapter 4, comprises the theoretical foundations as well as relevant information concerning the corporate governance context in Switzerland and internal communication. Based on the theoretical part, the subsequent empirical part from chapter 5 to chapter 8 presents the hypotheses for the quantitative analysis, describes the research methodology in detail and conveys the empirical results before for the implications are discussed and the thesis is concluded. Since the theoretical part provides the foundation for the empirical part, the aspects that are emphasized in the theoretical part are equally reflected in the empirical analysis and in the presentation of the results so that both parts complement and mirror each other.

Figure 2: Structure of the thesis



1.8 Chapter summary

This chapter served to clarify the important terminology, to describe the research phenomenon and to emphasize the current state of knowledge based on which the research objective and research questions could be derived. It also briefly explained the research methodology and illustrated the scope and general outline of the thesis. To recapitulate, the research phenomenon of this thesis was effective communication between internal audit and the board and senior management while the research objective, which is more specific, was to analyze the *constituents*, *antecedents* and *outcomes* of effective communication. The methodological approach was a *mixed methods strategy* that uses methodological triangulation, whereby the respective strengths and weaknesses of each methodology are leveraged upon and mitigated. The thesis only concentrated on the scope outlined in the previous section and consisted of nine chapters – an introduction in chapter 1, the theoretical part from chapters 2 to 4, the empirical part from chapters 5 to 8 and the conclusion in chapter 9.

2 Theoretical foundations

This chapter focuses on presenting the theoretical foundations that are later used to derive empirically testable hypotheses. Before illustrating the four selected theoretical perspectives that help to explain the research phenomenon, the rationale is presented in terms of why different management theories can provide complementary explanations for the same phenomenon since already Scott (1961) argued that modern management theory needs to "allow for the incorporation of relevant contributions of many fields" (p. 26).

More recently, Eisenhardt (1989), Filatotchev & Boyd (2009) and Carcello et al. (2011), amongst others, strongly supported the use and synthesis of multiple management theories to analyze complex research phenomena. Eisenhardt (1989) recognized, using the example of agency theory, that any theory can only represent a "partial view of the world" that would – left by itself – ignore "a good bit of the complexity of organizations" (p. 71). Filatotchev and Boyd (2009) generally supported the "holistic approach" (p. 258) towards governance research and Carcello et al. (2011) postulated that researchers needed to consider the full diversity of theories through "leveraging theories from psychology or sociology" (p. 4) because different theories may convey alternate but equally valid perspectives on why firms exist, what makes them succeed and how their members behave.

In a way, each management theory represents a distinct lens of the *theory of the firm*. Grant (1996) clarified in this regard that "theories of the firm are conceptualizations and models of business enterprises which explain and predict their structure and behaviors", adding "although economists use the term "theory of the firm" in its singular form, there is no single, multipurpose theory of the firm" (p. 109). It was further elicited that any variant of the *theory of the firm* relies on certain assumptions concerning "the logical development of propositions concerning the structure, behavior, performance and, indeed, the very existence of firms" (Grant, 1996, p. 110). A widely regarded *theory of the firm* is the *transaction cost theory* by Coase (1937) that argues that firms exist when the transaction costs for conducting business are lower in authority-based, bureaucratic organizations than in the free market. Another example is the *behavioral theory of the*

firm by Cyert et al. (1959) and Cyert and March (1963) who asserted that human behavior is the main factor behind what organizations produce, how they price their products or how they allocate resources.

To provide an adequate and holistic theoretical framework for the research phenomenon under investigation, *systems theory, principal agency theory*, the *knowledge-based view of the firm* and the *theory of planned behavior* were considered the most relevant for the development of the hypotheses. The selected theories help to maintain a holistic perspective on the organization and simultaneously take into account the specific motives of individual employees. These four theories are therefore presented in more detail in the subsequent sections.

2.1 Systems theory

The first relevant theory is *systems theory* that relies on the understanding that organizations are complex systems of interrelated functions and activities standing in a continuous and dynamic exchange with each other (Drazin & Van de Ven, 1985; Boulding, 1956). The organization can thereby be considered as the superordinate system, whose subsystems are the organization's functions and activities, whose elements are in turn the individual employees (e.g. Katz & Kahn, 1978; Adams, 1976; Huse & Bowditch, 1973; Von Bertalanffy, 1968; March & Simon, 1958).

According to Scott (1961), *systems theory* looks at how individuals move into and out of the organizational system, how they interact with the internal environment, how they interact with each other in the system and how the system grows and remains stable (p. 20). It was further pointed out that the study of internal communication relies strongly on *systems theory* because communication "is viewed as the method by which action is evoked from the parts of the system", serving as a "control and coordination mechanism" that helps the organization achieve its objectives (Scott, 1961, p. 18).

The central concepts that underlie *systems theory* include *wholeness*, *hierarchy*, *openness* and *feedback* (Papa et al., 2008).

Table 2: Concepts of systems theory

Concept	Description
Wholeness	Implies that "the effect of the elements working in relationship to one another differs from the effect of their isolated, individual actions taken collectively" (Papa et al., 2008, p. 105).
Hierarchy	Refers to the ascending hierarchical order between the elements, the subsystems and the system as a whole.
Openness	Is characterized by the exchange of the organizational system with its external environment through permeable boundaries.
Feedback	Describes in how far "information concerning the outputs or the process of the system is fed back as an input into the system, perhaps leading to changes in the transformation process and/or future outputs" (Kast & Rosenzweig, 1972, p. 450). Therefore, *feedback* likewise suggests a high degree of interdependence of the system's elements.[7]

All four concepts could be applied to the research phenomenon although *wholeness*, *hierarchy* and *feedback* are more important than *openness* because this thesis only focuses on the internal rather than the external communication processes.

Conceptually, *systems theory* is closely related to *contingency theory*, which considers the multivariate nature of organizations and aims at understanding "the interrelationships within and among subsystems as well as between the organization and its environment and to define patterns of relationships or configurations of variables" (Kast & Rosenzweig, 1972, p. 460). Against the background of the research phenomenon, *systems theory* and *contingency theory* help to understand if and how effective communication promotes the performance of internal audit, the board and senior management and in which configuration this increased performance consequently might lead to higher governance effectiveness. Two alternative possibilities that are in line with *systems theory* are that internal audit, the board and senior management act either as substitutes or as complementary functions/activities to assure the effectiveness of governance, risk management and internal control processes in the organization (Misangyi & Acharya, 2014; Aguilera et al., 2008; Rediker & Seth, 1995).

[7] Also refer to section 4.5.1.3.

2.2 Principal agency theory

Principal agency theory, or simply *agency theory*, is one of the most popular perspectives in corporate governance research because in organizations where effective contracts are necessary and sometimes extremely difficult to implement, agency relationships are "omnipresent" (Shapiro, 2005, p. 282).

The main premise of *principal agency theory* is that the separation of ownership and management necessitates an effective system of internal control to compensate for the lack of direct control through the owners. When managers are not adequately controlled, the theory presumes, they might use asymmetric information to engage in self-serving behaviors. This may eventually harm the organization and lead to welfare losses at the expense of the shareholders. (Donaldson, 1990, p. 369; Perrow, 1986; Fama & Jensen, 1983; Jensen & Meckling, 1976; Berle & Means, 1932)

Internal control however creates agency costs that are incurred as long as the welfare losses due to management misconduct are higher than the costs for internal control (Grossman & Hart, 1983; Jensen & Meckling, 1976, p. 72). Internal audit is one such agency cost. Adams (1994) agreed accordingly that "internal auditing, in common with other intervention mechanisms like financial reporting and external audit, helps to maintain cost-efficient contracting between owners and managers" (p. 10).

In complete contrast to *principle agency theory*, *stewardship theory* assumes that management behaves in a collectivist, pro-organizational and trustworthy manner (Davis et al., 1997; Donaldson & Davis, 1991). Instead of employing control mechanisms to prevent opportunistic behavior, *stewardship theory* suggests that organizational structures should enable agents to act without repeated authorization of the principal (Donaldson, 1990, p. 377).

Whether or not the premises of *principal agency theory* or *stewardship theory* apply in practice might affect the communication process between internal audit and the board and senior management. If senior management acts in line with *stewardship theory*, the board might not be confronted with severe information asymmetries and therefore not

be very reliant on internal audit. If senior managements however behaves in a self-interested manner instead, the performance of internal audit and the effectiveness of the communication between internal audit and the board are even more important.

2.3 Knowledge-based view of the firm

The third relevant theory is the *knowledge-based view of the firm* as a concretization of the *resource-based view of the firm* that is one of the most widely regarded theoretical perspectives in management research (Newbert, 2007; Barney, 2001; Hart, 1995; Peteraf, 1993; Mahoney & Pandian, 1992; Wernerfelt, 1984). The *knowledge-based view of the firm* regards knowledge as a specific kind of resource and implies that the generation, transfer and use of knowledge creates a financial rent for the organization (Grant, 1996; Kogut & Zander, 1992). The underlying premise is that the organization is a knowledge-creating entity and that knowledge is associated with the ability to convert inputs into valuable outputs (Nonaka & Von Krogh, 2009; Nonaka et al., 2000; Nickerson & Zenger, 2004, p. 617). Therefore, the *knowledge-based view of the firm* provides the theoretical foundation to link effective communication with higher-level organizational outcomes such as governance effectiveness.

2.4 Theory of planned behavior

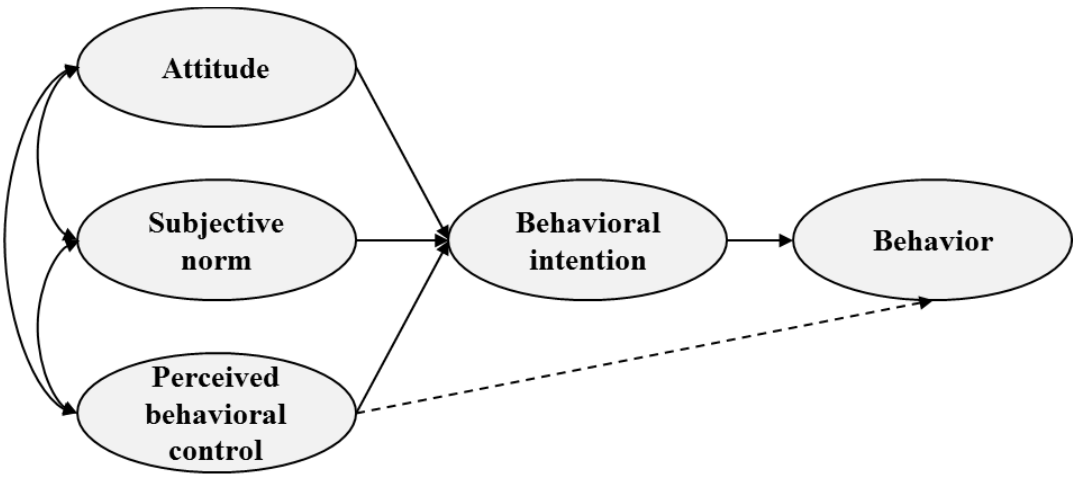
The last theory is the *theory of planned behavior*, which builds on the theory of reasoned action (Ajzen, 1991; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). In comparison to the theory of reasoned action, the *theory of planned behavior* additionally incorporates the construct of *perceived behavioral control,* which, together with the personal *attitude* and the *subjective norm*, influences the *intention* to engage in a specific behavior. The *behavioral intention* in turn correlates with the actual performance of the behavior.

Firstly, *attitude* describes the feeling or the opinion of a person towards the behavior. In the context of communication, already Hovland and Weiss (1951) acknowledged the importance of the attitude of the information sender towards the information receiver for communication effectiveness. Secondly, *subjective norm* pertains to the societal or subjective moral pressure to perform or to refrain from the behavior in question and thirdly, *perceived behavioral control* refers to the individual's subjective self-efficacy

and controllability of the behavior. Self-efficacy thereby is the belief of being capable of performing a behavior. It is "concerned with the judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). When self-efficacy is high, the performance of the behavior is easy for the individual. Controllability of the behavior means that a person believes that they have significant or even complete control over the behavior and its outcomes (Ajzen, 2002). The *perceived behavioral control* may also influence the behavior directly without mediation through *behavioral intention.* Consequently, the *perceived behavioral control* of internal auditors over the communication process with the board and senior management might be a particularly important precondition for communication effectiveness. *Attitude* towards the behavior, *subjective norm* and *perceived behavioral control* additionally tend to correlate with each other. Intuitively, the correlation makes sense because the *subjective norm* for example likely influences a person's *attitude*. Finally, since the *intention towards the behavior* relates to a person's willingness to engage in the behavior, it should be a precursor for the actual conduct (Ajzen, 1991).

Overall, the *theory of planned behavior* argues that the "intentions to perform behaviors of different kinds can be predicted with high accuracy from attitudes toward the behavior, subjective norms, and perceived behavioral control, and these intentions, together with perceptions of behavioral control, account for considerable variance in actual behavior" (Ajzen, 1991, p. 179). All theoretical relationships between the previously explained constructs are once again represented in the subsequent figure.

Figure 3: Overview of the theory of planned behavior



2.5 Chapter summary

In this chapter, the theories that build the theoretical framework for the subsequent empirical analysis were presented. S*ystems theory* points out that governance functions and activities are mutually interdependent and may work in a complementary or substitutional manner. This applies to the relationship between internal audit, the board and senior management that are interdependent and rely on regular feedback to maintain the effectiveness of the organizational system in which they interact. In addition, *principal agency theory* implies that, due to the likelihood of information asymmetries between the board and senior management, effective communication between internal audit and the board might increase the performance of the board if senior management acts in a self-serving manner. However, since internal audit is likewise an agent of the board, internal auditors also rely on effective communication with the board to fulfill their mandate and add value in the organization. The relevance of effective communication for good corporate governance can be explained further through the *knowledge-based view of the firm* while the *theory of planned behavior* presents selected antecedents for internal auditors to engage in effective upward communication with the board and senior management.

Each of the previous theories conveys only one perspective of the research phenomenon and since a theory is merely a simplified representation of reality, it makes sense to apply several theories that complement each other. In this way, the research phenomenon can be evaluated in a more holistic and multidimensional fashion.

3 Internal audit and its key stakeholders

This chapter presents the theoretical background in terms of the relevant governance regulations in Switzerland, outlines the *Three Lines of Defense* model and highlights the common roles and responsibilities of internal audit, the board and senior management as well as the implications of previous researchers regarding the working relationship between internal audit and its key stakeholders. It thus serves to explain the governance and institutional context in which the research phenomenon of internal communication between internal audit and the board and senior management is assessed.

3.1 Regulatory background

The first section deals with the regulatory background in Switzerland and illustrates the most important provisions of the Swiss Code of Obligations (CO), the Swiss Code of Best Practice for Corporate Governance (Swiss Code), the *Circulars 2017/1* and *2017/2* by the Swiss Financial Market Supervisory Authority (Eidgenössische Finanzmarktaufsicht (FINMA)). Lastly, it also gives an overview of the professional guidance by the IIA.

3.1.1 Code of Obligations

The CO was finalized in 1911 and is since the part of the Swiss civil law that regulates the rights and obligations of companies towards their shareholders. For the research phenomenon under analysis, the articles 716 and 754, which outline the responsibilities as well as the liability of the board, are especially relevant. The non-transferable and inalienable duties specified in article 716a CO are illustrated in section 3.2.4.2.

Article 716 paragraph two states that the board is in charge of the organization's management unless "responsibility for such management has been delegated". The second paragraph of article 716a further details how the board must ensure appropriate reporting to its members, substantiating that the ultimate responsibility remains with the board even if certain management responsibilities are delegated. To ensure that the board receives all relevant information, the second paragraph of article 716b specifies that the internal reporting process must be defined in the company regulations.

Article 754 CO is concerned with the liability of the board and states that "the members of the board of directors and all persons engaged in the business management or liquidation of the company are liable to the company, to the individual shareholders and to creditors for any losses or damage arising from any intentional or negligent breach of their duties". It is further emphasized that "a person who, as authorized, delegates the performance of a task to another governing officer is liable for any losses caused by such officer unless he can prove that he acted with all due diligence when selecting, instructing and supervising him". Consequently, if the internal reporting to the board is not effective, any damage is caused because of this and the board did not act with all due diligence, the board members are still accountable for any welfare losses that result from this neglect as well for any mistakes or fraud committed by the persons that it delegated responsibilities to. (Federal Assembly of the Swiss Confederation, 2017)

3.1.2 Swiss Code of Best Practice for Corporate Governance

Despite the previously mentioned provisions of the CO, Swiss corporate governance is largely still a so-called *soft law*, especially for non-listed companies and other organizations. This regulatory open space created a need for recommendations in terms of how companies and organizations that do not officially fall under the provisions of the CO may implement an effective governance system. After a series of accounting scandals in the U.S. around the beginning of the new millennium, the coming into effect of the Sarbanes Oxley Act (SOX) (2002) initiated a wave of stricter governance-related regulations worldwide.

In the light of these developments, the Swiss Code, which presents general recommendations and best practices in terms of governance responsibilities, structures and internal control, was developed. Its preamble emphasizes that the recommendations are intended to "address the situation in Switzerland with its characteristic mixture of large, medium and small public limited companies" while illustrating "the high standards of practice which are now being widely observed by many companies in Switzerland" (Economiesuisse, 2016, p. 6). The Swiss Code applies primarily to public limited companies, however also non-listed, economically significant companies or organizations, including organizations with a different legal form, are encouraged to apply its best practices (Economiesuisse, 2016, p. 6). Nonetheless, Swiss public limited companies are required to either *comply* with the recommendations or *explain* their deviation, also known as the

comply or explain-principle. This principle allows these companies to put their own "ideas on structuring and organization into practice" while at the same time nudging them to strive for the highest governance and internal control standards (Economiesuisse, 2016, p. 3).

In detail, the Swiss Code illustrates the roles and responsibilities of the shareholders, the external auditor and the board of directors. It also provides quite specific recommendations with regard to the board's composition, independence, procedures and Chairmanship, conflicts of interests, internal controls, risk and compliance. Notably, the Swiss Code once again underlines the accountability of the board for the "strategic direction and supervision of the company" and states that the board should "determine the strategic goals, the general ways and means to achieve them and the persons responsible for conducting the company's business", "shape the company's corporate governance and put it into practice", "ensure the fundamental harmonization of strategy, risks and finances" and "be guided by the goal of sustainable corporate development"(Economiesuisse, 2016, p. 9). The board is further responsible for appropriately establishing management and control functions and if certain responsibilities are transferred, for documenting the scope of the power that has been delegated in an internal regulation (Economiesuisse, 2016, p. 10).

The recommendations of the Swiss Code are apparently similar to the provisions of the CO, but provide organizations with more details and therefore a clearer guidance as to how to implement a good corporate governance system. The Swiss Code also explicitly recommends that organizations "should set up an internal audit function, which should report to the Audit Committee, or as the case may be, to the Chairman of the Board of Directors" (Economiesuisse, 2016, p. 13). For this reason, there is a strong institutional pressure of Swiss listed companies and organizations of a certain size and public visibility to adopt the best practice to establish an internal audit with a direct reporting line to the board or the audit committee.

3.1.3 FINMA Circulars

In Switzerland, not all organizations face the same corporate governance requirements as there are stricter regulations for banks and insurers according to the binding provisions in the *Circulars 2017/1* and *2017/2* by the Financial Market Supervisory Authority.

Circular 2017/1 replaces its predecessor *Circular 08/24* "Monitoring and internal control – banks" from 2008, specifying the corporate governance, risk management, internal control system and internal audit requirements for banks, financial groups, conglomerates and securities dealers and describing in detail the roles and duties of the board of directors, of the executive board, the design of the internal control system as well as the requirements for the internal audit function or activity. Establishing an internal audit and ensuring independent control over the internal control system are mandatory, although internal audit can be delegated to the internal audit function of a parent or of another group company, to a separate firm that is independent of the statutory auditor or to an independent third party as long as the necessary expertise and resources can be demonstrated. Internal audit should further have a direct reporting line to the board, respectively the audit committee as well as "an unlimited right of inspection, information and audit within the institution" (p. 11). It is additionally emphasized that internal audit "must meet the qualitative requirements defined by the Institute of Internal Auditing Switzerland (IIAS)" and that the "work of internal audit is based on the International Standards for the Professional Practice of Internal Auditing, as issued by the Institute of Internal Auditors (IIA)" (p. 12).

Circular 2017/2 replaces the former *Circular 08/32* "Corporate governance – insurers" and the former *Circular 08/35* "Internal audit – insurers" and applies to insurers as well as to insurance groups and conglomerates. While *Circular 2017/1* focuses principally on the duties of the board of directors, on the institution-wide risk management framework and internal control system, on internal audit as well as on group structures, *Circular 2017/2* additionally underlines certain general corporate governance principles and also provides regulations for the compliance function. Amongst the corporate governance principles stated in *Circular 2017/2*, it is explicitly mentioned that the insurer or the insurance group must establish "internal reporting processes to share information with all relevant units/individuals in the company" (FINMA, 2017, p. 3). This *Circular*

likewise requires that internal audit should be established in accordance with the IIA Standards and that it has to report directly to the board or the audit committee so that it is "organizationally and operationally independent of the insurance company's other control functions and has unlimited right of inspection, information and audit within the insurance company" (p. 6).

Like banks, Swiss insurers may outsource the internal audit to "the internal audit function of a group company, provided that the supervised insurance company is included in group-wide control and management processes", to "an audit firm which has been approved by the Federal Audit Oversight Authority (FAOA) and which is independent of the audit firm already appointed to the assurance company under Article 28 ISA" or, similarly, to an external service provider as long as independence from the audit firm is given (p. 7).

Moreover, both *Circulars* detail further provisions regarding the duties and responsibilities of internal audit, the performance of audits and the reporting of the results.

3.1.4 IIA guidance

The professional guidance for internal auditors is the IPPF that is issued by the IIA and further promulgated by its national affiliations.

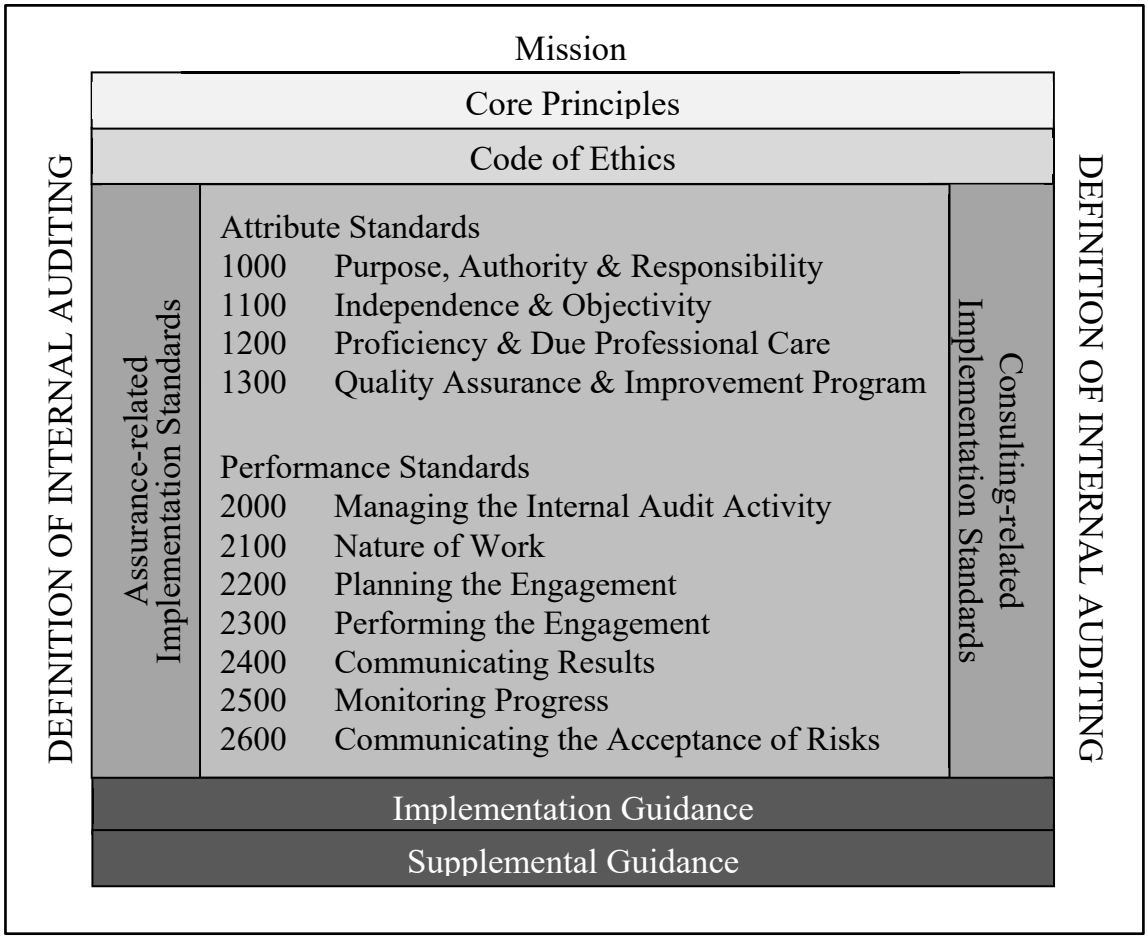
Founded in 1941, the IIA has almost 200'000 members in the areas of internal audit, risk management, governance, internal control, information technology audit, education or security in more than 170 countries worldwide. The IIA describes itself as "the internal audit profession's global voice, recognized authority, acknowledged leader, chief advocate, and principal educator" and highlights "the value internal audit professionals add to their organizations" (IIA website[8]). The IIA is also responsible for several professional qualifications, including the *Certified Internal Auditor*® (CIA®) qualification, the *Qualification in Internal Audit Leadership*® (QIAL®), the *Certification in Control Self-Assessment* (*CCSA*®), the *Certified Financial Services Auditor*® (CFSA®) and the *Certified Government Auditing Professional*® (CGAP®) qualifications as well as the *Certification in Risk Management Assurance*® (CRMA®). Similar certifications that are

[8] www.na.theiia.org.

accredited by other associations are the qualification as *Certified Fraud Examiner®* (CFE®) through the Association of Certified Fraud Examiners and the qualification as *Certified Information Systems Auditor®* (CISA®) through the Information Systems Audit and Control Association. The Swiss affiliation of the IIA, the *Schweizerische Verband für Interne Revision* (SVIR) or *IIA Switzerland* (IIAS), was founded in 1980 and has been affiliated with the IIA since 1997, currently counting more than 2,500 members.

The historical development of the IPPF dates back to the year 1947 when the *Statement of the Responsibilities of Internal Auditing* was issued, followed by the *Code of Ethics* in 1968 and the *Standards for the Professional Practice of Internal Auditing* in 1978. Thus far, the *Standards* were reviewed three times, with the revised versions effective on January 1st, 2011, January 1st, 2013 and January 1st, 2017, respectively. In 2015, a series of considerable changes were made to the structure of the IPPF, including the addition of the *Mission* and the *Core Principles* as new parts of the mandatory guidance as well as a reorganization and successive renewal of the recommended guidance. The IPPF in its current form consists of the following mandatory and recommended elements.

Figure 4: Overview of the IPPF structure[5]



The mandatory guidance of the IPPF comprises the *Definition of Internal Auditing*, the *Mission*, the *Core Principles*, the *Code of Ethics* and the *Standards*, which can again be differentiated into *Attribute Standards*, *Performance Standards* as well as *Assurance-related Implementation Standards* and *Consulting-related Implementation Standards*. Since the *Definition* was already presented in section 1.1.3, it will not be explained again at this point. The *Mission*, which was added to the IPPF in 2015, states that internal audit should "enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight" (IIA, 2017). It thereby incorporates many elements of the internal audit value proposition[10] and highlights the aspects of *adding value*, *objectivity* and *assurance* as the core elements of the *Definition*. Instead of using the term *consulting*, the *Mission* uses the terms *advice* and *insight*, which are more general and should likely contribute to the perception of internal audit as a *Trusted Advisor* and value adding function or activity in the organization.

[9] The representation is the intellectual property of Prof. Flemming Ruud, PhD.
[10] Also refer to section 3.2.3.2.

Besides, the new *Core Principles* serve as concise guiding principles for internal auditors' mindset and professional behavior. They are easy to understand, remember and internalize. The ten *Core Principles* (IIA, 2017) are:

1. Demonstrates integrity.
2. Demonstrates competence and due professional care.
3. Is objective and free from undue influence (independent).
4. Aligns with the strategies, objectives, and risks of the organization.
5. Is appropriately positioned and adequately resourced.
6. Demonstrates quality and continuous improvement.
7. Communicates effectively.
8. Provides risk-based assurance.
9. Is insightful, proactive, and future-focused.
10. Promotes organizational improvement.

The *Code of Ethics* consists of the four principles *integrity*, *objectivity*, *confidentiality* and *competency* that are each complemented by more specific rules of conduct. *Integrity* requires internal auditors to establish trust so that others can rely on their judgment, whereas *objectivity* postulates that internal auditors must reject any unduly influence on their work and refrain from engaging in self-interested behavior. *Confidential* internal auditors meanwhile exhibit absolute respect for the value and ownership of the information they come in contact with and do not disclose this information in any inappropriate or unauthorized manner. Eventually, *competency* refers to the knowledge, skills and experience that are needed to effectively fulfill the internal audit mandate and that internal auditors must seek to acquire, maintain and enhance. (IIA, 2017, Code of Ethics)

As already mentioned previously, the *IIA Standards* consist of *Attribute Standards* that describe the prerequisites and the characteristics of internal audit, of *Performance Standards* that refer to the practice and specific processes of performing an audit and of *Implementation Standards*, which guide professionals in more detail in terms of how to implement the *Standards*.

The *Implementation Guidance* and the *Supplemental Guidance* taken together constitute the recommended elements of the IPPF and serve to assist professionals in their application of the mandatory elements through providing further insights and methodologies.

3.2 Three Lines of Defense model

This section is concerned with the *Three Lines of Defense* model that depicts the most important functions and/or activities in governance, risk management and internal control and their relationships with each other. Although the model was accepted and adopted especially in the financial sector, it should be noted that it is often implemented more flexibly and that it can be adapted to the specific needs of the organizations.

3.2.1 Description of the model

For effective direction and control, the board interacts with other functions and activities in the organization to be able to fulfill its responsibilities (Ruud & Bodenmann, 2001). How these functions and activities specifically interact with each other in the organization can be portrayed with the help of the *Three Lines of Defense* model that was developed as part of the *Guidance on the 8th EU Company Law Directive* article 41 (ECIIA[11] & FERMA[12], 2010).

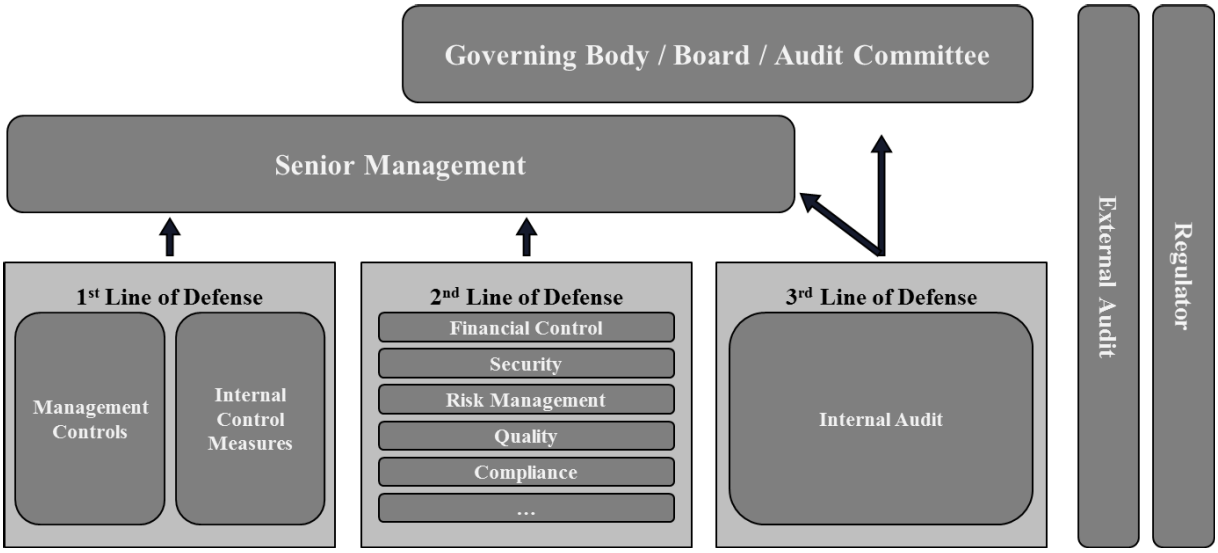
The model illustrates the relationships between the governance functions and activities that share the common objective to monitor the effectiveness of the internal control and risk management systems (Decaux & Sarens, 2015, p. 60; ECIIA & FERMA, 2010, p. 3). The main governance functions and activities portrayed in the model are the board of directors and the audit committee, senior management, as well as the *Three Lines of Defense* that aim to reduce the inherent risk to a level that is accepted by the board. The overall responsibility for effective governance lies once again with the board and senior management although accountability can be "shared" with operational management through delegation (ECIIA & FERMA, 2010, p. 11).

The *Three Lines of Defense* are the functions and activities that own and manage the risks (*risk owners*), that oversee the risks (*risk controls*) and that provide independent assurance (*risk assurers*). The regulator and the external auditor are sometimes considered as the *Fourth Line of Defense*. Apart from being in, respectively outside of the organization, the main difference between internal and external audit lies in the focus of external audit on financial reporting, whereas internal auditors pursue a broader mandate

[11] ECIIA is short for European Confederation of Institutes of Internal Auditing.
[12] FERMA is short for Federation of European Risk Management Associations.

as highlighted by the *IIA Definition*. The cooperation between internal and external audit is mostly regulated in the International Standard on Auditing (ISA) 610 – *Using the Work of Internal Auditors* but is often limited to financial aspects.

Figure 5: The Three Lines of Defense model



The tasks of the *First Line of Defense* are performed by operational management that maintains the internal control system and "identifies, assesses, controls and mitigates risks, guiding the development and implementation of internal policies and procedures and ensuring that activities are consistent with goals and objectives" (IIA, 2013, p. 3). The *First Line of Defense* is therefore the closest to the operational processes and for this reason has a direct functional reporting line to senior management. By contrast, the *Second Line of Defense* monitors the effectiveness of the *First Line* and consists for example of a risk management function or activity, a compliance function or activity and other functions or activities depending on the organization's needs and resources. Despite being farther removed from the operational processes than the *First Line*, the *Second Line* is still a management function that reports functionally to senior management (Ruud et al., 2010).

The *Third Line of Defense* is internal audit as the only organizationally independent function or activity due to its direct reporting line to the board. This direct reporting line is recommended in the mandatory guidance of the IPPF since IIA Standard 1110 – *Organizational Independence* states that the "Chief Audit Executive must report to a level within the organization that allows the internal audit activity to fulfil its responsibilities", whereby this is achieved when internal audit reports directly to the board. According to

Standard 1110, the board is normally also responsible for approving the internal audit budget and resource plan, receiving communications from the CAE regarding internal audit's performance relative to the internal audit plan, approving decisions concerning the appointment and removal of the CAE, approving the CAE's compensation and making inquiries to determine any limitations with regard to the scope or resource endowment of the internal audit function or activity (IIA, 2017).

Since senior management is potentially in the position to conceal the information it receives from the *First* and *Second Line of Defense* from the board, the direct reporting line from internal audit to the board is very important. However, for administrative purposes, internal audit has an additional reporting line to senior management that is addressed in IIA Standard 2060 – *Reporting to Senior Management and the Board.* This IIA Standard requires that internal audit reports matters related to its "purpose, authority, responsibility, and performance relative to its plan and on its conformance with the Code of Ethics and the Standards" as well as significant risk and control issues to senior management (IIA, 2017).

3.2.2 Combined assurance

The IIA Standards 1112 – *Chief Audit Executive Roles beyond Internal Auditing*, 2050 – *Coordination and Reliance*, 2110 – *Governance* as well as the Practice Guide *Internal Audit and the Second Line of Defense* (2016) encourage internal audit to coordinate the activities of the *Three Lines of Defense* so that "each line of defense understands its responsibilities" and no "duplication and assurance gaps will persist" (Decaux & Sarens, 2015, p. 60).

Considering the many governance functions and activities that tend to be established in larger organizations, the IIA has promoted the concept of *combined assurance* to increase the effectiveness of the risk management and internal control systems and of internal audit itself. Further benefits of *combined assurance* are that the potential assurance fatigue of the audited units might be alleviated, additional resources are freed and a common and harmonized understanding of risks and priorities can be achieved.

Combined assurance hence aims at "integrating and aligning assurance processes so that senior management and audit and supervisory committees obtain a comprehensive, holistic view of the effectiveness of their organization's governance, risks, and controls to

enable them to set priorities and take any necessary actions" (Huibers, 2015, p. 1). An effective *combined assurance* therefore also includes the consideration and alignment of different rating systems and reporting formats in order to prevent contradiction and confusion as well as a lack or an overload of information for the board and senior management (Huibers, 2015, p. 3; Sarens et al. 2012). In this manner, the board and senior management can receive information in a more "precise and insightful" way (Huibers, 2015, p. 4).

Ways to implement *combined assurance* include integrated audits, integrated audit planning and reporting, alignment of tasks through coordination or functional integration of internal audit with other governance functions/activities, which is however not preferred due to the importance of independence and objectivity for internal audit. Decaux and Sarens (2015) argued that the maturity of the enterprise risk management system, *combined assurance* awareness, determining a function, activity or person in charge of coordination ("*combined assurance* champion"), developing a *combined assurance* strategy, mapping tasks and reporting results in a consolidated manner are the key steps in achieving an effective *combined assurance* approach (p. 58).

3.2.3 Internal audit

This section presents more in-depth information concerning the establishment, mandate, value proposition and changing role of internal audit as one of the central governance actors in this thesis.

3.2.3.1 Nature of work

Internal audit engages in three main areas of work that are illustrated in Standard 2100 – *Nature of Work*. According to this IIA Standard, which partly mirrors the *Definition of Internal Auditing*, internal audit must improve governance, risk management and control processes while employing a "systematic, disciplined and risk-based approach". Standard 2110 – *Governance*, Standard 2120 – *Risk Management* – and Standard 2130 – *Internal Control* further specify the tasks and responsibilities of internal audit in these three main areas.

Following IIA Standard 2110 – *Governance*, internal audit must assess and make appropriate recommendations to improve the organization's governance processes for

"making strategic and operational decisions", "overseeing risk management and control", "promoting appropriate ethics and values within the organization", "ensuring effective organizational performance management and accountability", "communicating risk and control information to appropriate areas of the organization", and "coordinating the activities of, and communicating information among, the board, external and internal auditors, other assurance providers, and management". (IIA, 2017). Consequently, the broad scope of work for internal auditors in the area of governance becomes evident, also including the communication of relevant information as an integral aspect.

As stated in IIA Standard 2120 – *Risk Management*, internal audit should contribute to the effectiveness of risk management through the identification of significant risks and through providing assurance that the risks accepted by management are in line with the organization's strategic objectives and risk appetite. This task implicitly also requires that the significant risks are communicated in a timely manner to all relevant parties. The *Assurance-related Implementation Standard 2120.A1* additionally puts forth that internal audit must specifically evaluate the risk exposures regarding the achievement of the organization's strategic objectives, the reliability and integrity of financial and operational information, the effectiveness and efficiency of operations and programs, the safeguarding of assets and compliance with laws, regulations, policies, procedures and contracts (IIA, 2017).

According to IIA Standard 2130 – *Control* and the *Assurance-related Implementation Standard 2130.A1*, internal audit should promote the continuous improvement of the internal control system and assess the adequacy and effectiveness of controls with respect to the achievement of the organization's strategic objectives, the reliability and integrity of financial and operational information, the effectiveness and efficiency of operations and programs, the safeguarding of assets and the compliance with laws, regulations, policies, procedures and contracts. The previously mentioned IIA Standard 2130.A1 for internal control apparently shows great similarities with the corresponding Standard for risk management, confirming the close conceptual relationship between governance, risk management and internal control. According to COSO (2013), the concept of governance includes the subordinate concepts of risk management and internal control, whereby risk management once again incorporates the concept of internal control. Internal control is consequently the most narrowly defined concept, followed by

risk management and then governance. As a result, effective governance automatically also means effective risk management and effective internal control.

3.2.3.2 Value proposition

Besides the IIA *Mission* and *Definition of Internal Auditing*, which prominently link the notion of adding value to the mandate of internal audit, the IIA has developed a more detailed value proposition that consists of the three elements *Assurance*, *Insight* and *Objectivity*.

Borrowing from the *Definition of Internal Auditing*, *assurance* suggests that internal audit "provides assurance on the organization's governance, risk management, and control processes to help the organization achieve its strategic, operational, financial and compliance objectives" (IIA website[13]). The first element clearly conveys that assurance services should be performed in all three areas of work – governance, risk management and internal control. The second element, *insight,* requires internal audit to act as "a catalyst for improving an organization's effectiveness and efficiency by providing insight and recommendations based on the analyses and assessments of data and business processes" (IIA website[14]). Lastly, *objectivity* demands that internal audit should commit to integrity and accountability and provide "value to governing bodies and senior management as an objective source of independent advice" (IIA website[15]). *Objectivity* thus relies closely on IIA Standard 1100 – *Independence and Objectivity* that stipulates that internal auditors must be free "from conditions that threaten the ability of the internal audit activity to carry out internal audit responsibilities in an unbiased manner" (IIA, 2017).

Although the value proposition per se provides little additional information compared to the IPPF, it still suggests the great expectation placed on internal audit to contribute measurable value to the organization.

[13] www.na.theiia.org.
[14] www.na.theiia.org.
[15] www.na.theiia.org.

3.2.3.3 Evolution of the mandate

Since its institutionalization in the 1940s when "because of war conditions, resources were limited, causing organizations, both business and government, to search for operating efficiency and economy" (Dittenhofer, 2001a, p. 443), internal audit has successively "experienced a shift toward a value-adding focus in recent years" (Mihret & Woldeyohannis, 2008, p. 586). Some researchers attributed the shift to the revised IIA *Definition of Internal Auditing* from 1999 that first introduced the idea of internal audit adding value to the organization (Mihret & Yismaw, 2007, p. 471; Nagy & Cenker, 2002).

Over the years, the role of internal audit has been extended until the three areas of work *governance*, *risk management* and *internal control* that are now represented in IIA Standard 2100 – *Nature of Work* became fully integrated as a part of the internal audit mandate. Initially, internal auditors were responsible for the reperformance of specific accounting transactions in order to prevent material error or fraud. Based on these initial responsibilities, the areas of work internal control and later risk management slowly took shape. Governance, the most recent area of work, became a topic of interest for the professional body and for scholars who were looking to further promote the role of internal audit for good corporate governance (Chambers & Odar, 2015; Selim & McNamee, 1999). Chambers (2008) described the evolution of internal audit as follows: "In the past internal auditing has made the quantum leaps from the internal check to the review of internal control, from inspection to auditing, from the audit of accounting matters to operational auditing, from reporting to the chief accountant to reporting to management and now to reporting to the audit committee, and from solely an assurance remit to one that embraces consulting services too" (p. 60). The extension of the internal audit mandate towards governance and value was perceived as so pivotal that this new focus has been termed internal audit's new business regime (Bou-Raad, 2000).

In spite of the steadfast promulgation of the value adding role by the IIA, the new mandate may be associated with several risks. It was argued for example that the IIA professional guidance has "the potential to be incompatible with the demands and accountabilities of the internal auditor or his or her employing organization (Ahmad & Taylor, 2009, p. 901; Myers & Gramling, 1997). Additionally, it was asserted that "scope of

work of the internal auditing practices negatively influences the information and communication aspect of the quality of the internal control system" so that internal audit's communication effectiveness with the board and senior management might be compromised (Fadzil et al., 2005, p. 861). Thus, a broad mandate may entail many opportunities as long as organizations establish safeguards for internal auditors' objectivity and clearly define expectations to which internal auditors can adhere, especially when serving multiple stakeholders.

3.2.3.4 Communication requirements

In this section, the internal communication requirements for internal audit are presented. Based on transaction cost economics, the behavior of organizational members at the lower hierarchical levels is often more strictly regulated than the behavior of organizational members at the upper levels (Milgrom & Roberts, 1990; Fama, 1980; Williamson, 1979; Coase 1937). As a result, the explicitly stated communication requirements for internal audit tend to outweigh the communication requirements for the board and for senior management. The importance of effective upward communication by internal audit is substantial because the communication process can affect the effectiveness of the governance, risk management and internal control systems as such (Dittenhofer, 2001b, p. 461; Lurati & Eppler, 2006). Therefore, it is understandable that the requirements that are placed upon how internal auditors should communicate are high.

As mentioned previously, the seventh *Core Principle* postulates that internal audit must communicate in an effective manner[16]. Leung et al. (2003) emphasized that internal audit should "ensure that complete, timely and reliable information is provided to the board and key senior management" (p. 6). Since statements like this might still be quite vague, several IIA Standards – both *Attribute* and *Performance Standards* – convey and describe the specific expectations for the CAE in terms of how to communicate with the board and senior management. The most relevant IIA Standards in the context of the research phenomenon are subsequently summarized.

[16] Also refer to section 3.1.4.

1. IIA Standard 1111 – *Direct Interaction with the Board*

IIA Standard 1111 requires that the CAE must communicate and interact with the board in a direct manner. Such direct interaction means that no third parties may unduly partake in or interrupt the communication process and that the board should be accessible and available for the CAE. The corresponding *Implementation Guide* for IIA Standard 1111 provides additional explanations in terms of how the direct interaction with the board should be established. It is suggested that the CAE can participate in meetings with the audit committee or with the full board and that private meetings without senior management should be scheduled at least annually. When it comes to very sensitive matters, the CAE also has the right to directly contact the Chairperson or any other member of the board. In summary, Standard 1111 stipulates that the communication with the board should be straightforward and transparent, which can also be promoted through regular face-to-face meetings and personal phone calls prior to formal meetings. (IIA, 2017)

2. IIA Standard 1320 – *Reporting on the Quality Assurance and Improvement Program*

The CAE is moreover required to inform the board and senior management about the status of the *Quality Assurance and Improvement Program* (QAIP) that is further described in the IIA Standards 1300 – *Quality Assurance and Improvement Program*, 1310 – *Requirements for the Quality Assurance and Improvement Program*, 1311 – *Internal Assessments*, 1312 – *External Assessments*, 1321 – *Use of "Conforms with the International Standards for the Professional Practice of Internal Auditing*" as well as in IIA Standard 1322 – *Disclosure of Nonconformance*.

The main IIA Standard concerning the QAIP, Standard 1320*,* postulates that "the chief audit executive must communicate the results of the quality assurance and improvement program to senior management and the board" and that the disclosed information "should include the scope and frequency of both the internal and external assessments, the qualifications and independence of the assessor(s) or assessment team, including potential conflicts of interest, conclusions of assessors and corrective action plans". Since internal audit is supposed to add value to the organization, communications concerning the QAIP are very important to advance internal audit performance and effectiveness. (IIA, 2017)

3. IIA Standard 2020 – *Communication and Approval*

According to IIA Standard 2020 – *Communication and Approval*, the CAE is required to inform the board and senior management about the internal audit plan and the necessary resources as well as other aspects that need approval. It is therefore explicitly clarified in IIA Standard 2020 that the CAE "must communicate the internal audit activity's plans and resource requirements, including significant interim changes, to senior management and the board for review and approval". If the resources are too limited to fulfill the annual internal audit plan, the CAE must report the impact of these resource limitations. (IIA, 2017)

4. IIA Standard 2060 – *Reporting to Senior Management and the Board*

IIA Standard 2060 puts forth that the CAE "must report periodically to senior management and the board on the internal audit activity's purpose, authority, responsibility, and performance relative to its plan and on its conformance with the Code of Ethics and the Standards" and that the reporting "must also include significant risk and control issues, including fraud risks, governance issues, and other matters that require the attention of senior management and/or the board". In any case, the CAE has to report information about the internal audit charter, independence of the internal audit activity, the audit plan and its progress, resource requirements, results of audit activities, conformance with the *Code of Ethics* and the *Standards* as well as management's response to risk that the CAE assessed as unacceptable. With respect to the content and frequency of the reporting, the board and senior management may determine collaboratively with internal audit what to communicate and how often communication is necessary under consideration of the importance and the urgency of the matter at hand. (IIA, 2017)

5. IIA Standard 2110 – *Governance*

As already mentioned, IIA Standard 2110 addresses the topic of internal communication by stating that internal audit "must assess and make appropriate recommendations to improve the organization's governance processes for […] communicating risk and control information to appropriate areas of the organization". Although there is no specific reference to the board or senior management in IIA Standard 2110, it can be inferred that "to appropriate areas" automatically comprises the board and senior management

as the governing bodies of the organization. Besides, potential further recipients of the relevant risk and control information are operational management as well as the functions and activities of the *Second Line of Defense*, especially in the case that the organization has implemented a *combined assurance* approach. (IIA, 2017)

6. IIA Standard 2120 – *Risk Management*

IIA Standard 2120 – *Risk Management*, which is essentially a specification of IIA Standard 2110 – *Governance,* touches upon some communication requirements for internal audit. Specifically, this IIA Standard highlights effective communication as an integral part of effective risk management while its interpretation particularly emphasizes the attribute of timeliness, stating that "relevant risk information is captured and communicated in a timely manner across the organization, enabling staff, management, and the board to carry out their responsibilities". (IIA, 2017)

7. IIA Standard 2400 – *Communicating Results*

IIA Standard 2400 addresses the necessity for internal audit to report their findings after each audit, postulating that internal auditors "must communicate the results of engagements". The details in terms of how the respective engagement results should be communicated are further elaborated in the subsequent IIA Standards 2410 – *Criteria for Communicating*, 2420 – *Quality of Communications*, 2421 – *Errors and Omissions* as well as 2450 – *Overall Opinions*, which are summarized in the following. (IIA, 2017)

8. IIA Standard 2410 – *Criteria for Communicating*

According to the IIA Standards 2410 and 2410.A1, the CAE must at least report the "engagement's objectives, scope, and results" and "include applicable conclusions, as well as applicable recommendations and/or action plans". Additionally, it is pointed out that internal audit should provide an opinion that proactively considers "the expectations of senior management, the board, and other stakeholders and must be supported by sufficient, reliable, relevant, and useful information". (IIA, 2017)

9. IIA Standard 2420 – *Quality of Communications*

A very important IIA Standard highlighting the quality requirements for communication with the board and senior management is IIA Standard 2410 – *Quality of Communications*. It states that communications "must be accurate, objective, clear, concise, constructive, complete, and timely". Since practitioners may still be uncertain with regard to how to implement these requirements, the interpretation of IIA Standard 2410 provides the following terminological clarifications for each of the above criteria (IIA, 2017):

- "*Accurate* communications are free from errors and distortions and are faithful to the underlying facts".
- "*Objective* communications are fair, impartial, and unbiased and are the result of a fair-minded and balanced assessment of all relevant facts and circumstances."
- "*Clear* communications are easily understood and logical, avoiding unnecessary technical language and providing all significant and relevant information."
- "*Concise* communications are to the point and avoid unnecessary elaboration, superfluous detail, redundancy, and wordiness."
- "*Constructive* communications are helpful to the engagement client and the organization and lead to improvements where needed."
- "*Complete* communications lack nothing that is essential to the target audience and include all significant and relevant information and observations to support recommendations and conclusions."
- "*Timely* communications are opportune and expedient, depending on the significance of the issue, allowing management to take appropriate corrective action."

10. IIA Standard 2421 – *Errors and Omissions*

IIA Standard 2421 requires the CAE to "communicate corrected information to all parties who received the original communication" for the case that the final audit report contained a significant error or omission (IIA, 2017).

11. IIA Standard 2450 – *Overall Opinions*

In order to provide the board and senior management with truly valuable messages for the direction and control of the organization, internal audit must establish informational links to the organization's strategy and to the risks that might endanger the achievement of objectives in its reporting. IIA Standard 2450 postulates correspondingly that the "overall opinion must be supported by sufficient, reliable, relevant and useful information" and that when "an overall opinion is issued, it must take into account the strategies, objectives, and risks of the organization and the expectations of senior management, the board, and other stakeholders".

The interpretation for this IIA Standard moreover clarifies that the related "communication will include the scope, including the time period to which the opinion pertains, scope limitations, consideration of all related projects including the reliance on other assurance provider, a summary of the information that supports the opinion, the risk or control framework or other criteria used as a basis for the overall opinion, the overall opinion, judgment, or conclusion reached and the reasons for an unfavorable overall opinion must be stated" (IIA, 2017).

12. IIA Standard 2600 – *Communicating the Acceptance of Risks*

A last important IIA Standard that relates to the communication requirements of internal audit is IIA Standard 2600 – *Communicating the Acceptance of Risks*. Although internal audit is an agent of the board monitoring the actions of senior management, internal audit is not accountable for the implementation of remedial actions with regard to any findings detected during the audits. Nonetheless, if the CAE determines that senior management currently bears a level of risk that is higher than the risk appetite determined by the board, IIA Standard 2600 requires that "the chief audit executive must discuss the matter with senior management" and that if "the chief audit executive determines that the matter has not been resolved, the chief audit executive must communicate the matter to the board" (IIA, 2017).

3.2.4 Board of directors

After presenting the theoretical background for internal audit, this section serves to illustrate the key roles and duties of the board, the concept of board independence and the communication requirements for the board members.

3.2.4.1 Roles

The board of directors can principally fulfill three key roles, namely the *control role*, the *strategic role* and the *resource provision role*.

The revised *Principles of Corporate Governance* by the G20/Organization for Economic Cooperation and Development (OECD) (2015) highlighted the *control role* of the board by stating that the board is "chiefly responsible for monitoring managerial performance and achieving an adequate return for shareholders while preventing conflicts of interest and balancing competing demands on the corporation" (p. 45). The *control role* of the board is thereby rooted in *principal agency theory*[17], according to which the board's main task is to monitor management to prevent self-interested behavior when ownership and control are separate (Johnson et al., 1996; Pearce & Zahra, 1992; Boyd, 1990; Fama & Jensen, 1983; Jensen & Meckling, 1976).

The *strategic role* of the board developed when institutional pressures arose for the board "to challenge management's strategic leadership" (Judge & Zeithaml, 1992, p. 766) and to act as "a critical strategic asset that injects a strategic perspective into strategic decision making processes" (Kim et al., 2009, p. 728). The involvement of the board in the strategic decision-making processes was appreciated especially in times of economic and/or governance-related crises (McNulty & Pettigrew, 1999).

Besides, the board can be considered as a provider of resources that helps to manage environmental uncertainty and dependence. Hillman et al. (2000) underlined that boards are able to reduce "the transaction costs associated with environmental interdependency" (p. 236). By leveraging the social capital that board members tend to have, the organization might gain preferential access to financial, human and other resources, such

[17] Also refer to section 2.2.

as advice and counsel, legitimacy or the support of important stakeholders outside of the firm (Hillman et al., 2000; Hillman & Dalziel, 2003; Daily & Dalton, 1994; Gales & Kesner, 1994). When the board provides such resources to the organization, it fulfills its *resource provision role*.

According to the definition of corporate governance from the Cadbury Report (1992), stating corporate governance is the "system by which companies are directed and controlled", the *strategic role* and the *control role* could be considered as the most central board roles, and both can be promoted through effective communication with internal audit. By gaining valuable insights from internal audit through effective upward communication, the *strategic role* of the board members might be facilitated. In addition, the *control role* of the board is important for the research phenomenon because it provides the foundation for its interaction with internal audit that attempts to reduce potential information asymmetries for the board members.

3.2.4.2 Duties

The *business judgment rule* is a professional doctrine that outlines central duties of the board of directors, emphasizing the board members' *duty of care* and *duty of loyalty.* The *duty of care* implies that the board members should behave with the prudence and diligence that is expected of them, whereas the *duty of loyalty* demands that the board members make their decisions with the benefit of the organization in mind. Article 717 CO, which directly refers to the *duty of care* and the *duty of loyalty*, states that the board "must perform their duties with all due diligence and safeguard the interests of the company in good faith". As a precondition for the fulfillment of these two duties, Knell (2006) acknowledged that the board must be supplied with all relevant information in a timely manner, thereby reinforcing the importance of effective upward communication (p. 101).

Besides, article 716a CO points out seven specific non-transferable and inalienable duties of the board in Switzerland, which are:

1. The overall management of the company and the issuing of all necessary directives;
2. Determination of the company's organization;

3. The organization of the accounting, financial control and financial planning systems as required for the management of the company;
4. The appointment and dismissal of persons entrusted with managing and representing the company;
5. Overall supervision of the persons entrusted with managing the company, in particular with regard to compliance with the law, articles of association, operational regulations and directives;
6. Compilation of the annual report, preparation for the general meeting and implementation of its resolutions;
7. Notification of the judge in the event that the company is over-indebted.

3.2.4.3 Independence

Besides the *duty of care* and the *duty of loyalty*, the *duty of independence,* which is however not a mandatory regulatory requirement in Switzerland, is often considered as a third duty of the board. It stipulates that the board members must make every decision as if they were uninfluenced by management and always be "able to exercise objective independent judgment of corporate affairs" (G20/OECD, 2015, p. 50; Bogart, 1994). Nonetheless, there is still a lack of consensus regarding how independent the board should be because independence can either relate to outside directors, non-executive directors, the separation of the Chairman and CEO positions, the demographic distance between the board and the CEO or even to the avoidance of friendship ties between board members and members of senior management (Finkelstein et al., 2009, p. 248). It was additionally pointed out that interlocking directorships might also represent a threat to the independence of the board (Ruigrok et al., 2006).

In Switzerland, the *one-tier board system* prevails, which is characterized by a single board responsible for managing and monitoring the organization. Although the board may establish committees, no separate oversight body for decision control is established and decision management and decision control are integrated (Jungmann, 2006). According to Krivogorsky (2006), the *one-tier board system* has the benefit that information can flow more easily between the persons accountable for direction and control (p. 183). However, the *one-tier board system* likewise entails the risk of weaker internal control because executive and non-executive directors are not personally and functionally separated, principally even allowing a personal union between the CEO and the

Chairman of the Board (Jungmann, 2006, p. 436). Jungmann (2006) summarized the potential diffusion of executive and non-executive roles in the *one-tier board system* by stating that "there is no black or white distinction between the functions, neither between the separate organs nor within an organ of the company itself" (p. 437).

From a theoretical point of view, the *one-tier board system* reflects a *stewardship perspective* on corporate governance because the board is trusted to serve the overarching objectives of the organization, irrespective of whether it performs executive or oversight-related tasks.

Boards in Switzerland have historically consisted predominantly of non-executive and therefore relatively independent members (Hofstetter, 2002). The Swiss Code explains that the board can be considered independent if the following principles are fulfilled (Economiesuisse, 2016, p. 13):

- "Independent members shall mean non-executive members of the board of directors who have never been a member of the executive board, or were members thereof more than three years ago, and who have no or comparatively minor business relations with the company."
- "Where there is cross-involvement in other boards of directors, the independence of the member in question should be carefully examined on a case-by-case basis."
- "The board of directors may define further criteria of institutional, financial or personal independence."

On average, the extant literature concerning the relationship between an independent board and shareholder value or financial performance came up with mixed or inconclusive results (Baysinger & Butler, 1985; Rosenstein & Wyatt, 1990; Bhagat & Black, 1999, 2001; Peng, 2004). Theoretically, this might be the case because independence supports the *control role* of the board but not the *strategic role* for which closer ties and regular exchange with senior management may be preferable. With regard to internal audit, board independence was generally found to benefit its effectiveness (Raghunandan et al., 2001). Alzeban and Sawan (2015) for example showed that the implementation of internal audit recommendations was positively related to the independence of audit committee members.

3.2.4.3 Communication requirements

To receive all relevant information, the board must in advance convey its "knowledge needs and decision constraints" to internal audit (Lurati & Eppler, 2006, p. 85). However, the content, quality and frequency with which the board communicates its information needs as well as other relevant matters to internal audit are mostly at the discretion of the board members and dependent on their professional judgment. As highlighted earlier, the *business judgment rule* demands that the board must act in a manner that respects the *duty of care* and the *duty of loyalty*, requiring the board members to undertake all actions that support the achievement of organizational objectives, including effective communication with internal audit as its agent. In addition, the liability of the board according to article 754 CO increases the pressure on board members in Switzerland to establish the appropriate structures and processes that facilitate the achievement of organizational objectives.

3.2.5 Senior management

Although the duties of senior management are not explicitly written down in the CO like the duties of the board, certain key responsibilities of senior management are very common in practice, for example being accountable for implementing the decisions of the board, fulfilling a critical role for the communication of relevant information across the hierarchy and ensuring that the organizational design supports the achievement of organizational strategy (Ruud & Friebe, 2013). Senior management is further functionally responsible for the functions and activities of the *First* and *Second Line of Defense* and ultimately owns and controls the risks inherent in the operational processes (ECIIA & FERMA, 2010, p. 7).

Contrary to the board, senior management tends to be more concerned with ongoing tasks that include to "monitor and interpret external events and trends, deal with external constituencies […] and also formulate, communicate and monitor the organization's responses to the environment" (Hambrick, cited in Bournois et al., 2010, p. 24). Besides, senior management plays an important role for establishing and nurturing an appropriate *Tone at the Top* that is often considered to serve as a preventive internal control mechanism (COSO, 2013; Hermanson & Rittenberg, 2003, p. 31).

3.3 Internal audit's relationship with its key stakeholders

Since communication is a process for which the institutional context and the field of experience of the sender and the receiver of the information must be considered[18], the nature of the working relationship between internal audit and the board and senior management should be taken into account. Therefore, this section describes the relationship between internal audit and its key stakeholders, the board of directors and senior management, in more detail.

3.3.1 Internal audit and the board

The internal audit-board relationship has often been portrayed as symbiotic by the IIA. A functioning symbiosis between internal audit and the board includes that the board strengthens the position of internal audit vis-à-vis management and facilitates the completion of the internal audit plan (IIA, 2011, p. 3; Adams, 1994; Burns et al., 1994). Conversely, internal audit supports "the governance body/board in its role of guiding the entity in effectively and efficiently carrying out its mission" so that potential management misconduct can be reduced and organizational objectives are more likely to be accomplished (Colbert, 2002, p. 152; Ege, 2014). Chambers and Odar (2015) additionally pointed out that internal audit may alleviate the potential "assurance vacuum" for the board and that, for this reason, "the primary or only reporting line for the CAE should be to the independent element of the board" (p. 49).

Since the board can delegate certain responsibilities to the audit committee, the cooperation between internal audit and the audit committee has been studied extensively over the past years and decades. Sarens et al. (2009) referred to internal audit as the "comfort provider" of the audit committee due to "internal auditors' unique knowledge about risk management and internal control" and "their internal position, their familiarity with the company, and their position close to the people across the company" (p. 90). Conversely, Oussii and Taktak (2018) showed that a higher engagement of the audit committee in reviewing the internal audit program and internal audit findings led to a significantly higher internal control quality. Their implications thus gave strong support to the previous findings by Abbott et al. (2010) who asserted that audit committee oversight was

[18] Also refer to the communication model of Schramm (1954) in section 4.2.

positively related with internal audit focusing on the assurance and improvement of the internal control system. Frequent interaction with the board or the audit committee was also connected with higher independence of internal audit, higher internal audit budgets, reduced information asymmetries and with more likely implementation of remedial actions by senior management (Alzeban & Sawan, 2015; Carcello et al., 2011; Braiotta et al., 2010; Christopher et al. 2009; Goodwin & Yeo, 2001; Raghunandan et al., 2001; Scarbrough et al., 1998).

Consequently, it could be concluded that a strong working relationship between internal audit and the board, respectively the audit committee, that bases on trust and credibility can be considered essential for internal audit and the board in order to support each other in their interlocking goals (IIA, 2011).

3.3.2 Internal audit and senior management

IIA Standard 2060 – *Reporting to Senior Management and the Board* postulates that internal audit should periodically communicate its purpose, authority, responsibility, performance and conformance with the IPPF to senior management.

Due to its administrative reporting line, the effectiveness and value added of internal audit considerably depends on the extent to which it receives support from senior management (Leung et al., 2011; Baker, 2011; Mihret & Yismaw, 2007; Alzeban & Gwilliam, 2014; Cohen & Savag, 2010; Ahmad et al., 2009; Sarens & De Beelde, 2006a). This support can manifest for example through providing input for the internal audit plan, supporting ad hoc requests or implementing remedial measures proposed by internal audit in a timely manner. The likelihood of receiving this support was argued to vary with the extent to which internal audit is able to meet the expectations of senior management (Sarens & De Beelde, 2006a, p. 238).

Nonetheless, other researchers asserted that internal audit's function as an agent of the board might be impeded if the relationship with senior management becomes too close. Chambers and Odar (2015) for example stated that since senior management has "their own means of assurance from the first and second lines of defence", internal audit's assurance to the board can become "damaged if internal audit is answerable to management" (p. 49).

By and large, scholars believe that senior management profits from internal audit because internal audit provides "independent and objective assurance on the quality of internal controls from someone other than the CFO or line managers" (Sarens & De Beelde, 2006a, p. 222). In their study of the relationships between internal audit and operational, middle and senior managers in Singapore, Yee et al. (2017) recently found that only middle managers perceived internal audit in a negative light as "watchdogs", whereas operational and senior managers greatly appreciated the services of internal audit, pointing towards a mutually beneficial working relationship.

3.3.3 Benefits and challenges of the dual reporting line

The dual reporting line to the board and senior management entails both benefits and challenges for internal audit.

One of the key benefits is that internal audit is functionally independent while still having the administrative support from senior management that is paramount for its effectiveness. The board is further more likely to receive accurate and complete information because superiors obtaining information from multiple sources were found to receive not only more but also less distorted information (Glauser, 1984).

Still, the dichotomy of the reporting lines may lead to professional conflict and decreased internal audit performance if the board and senior management pursue different objectives and the expectations placed on internal audit are not clear. Lenz and Sarens (2012) pointed out that often "there is no congruence between what the board wants, what the audit committee wants, and what senior management wants" and that "aiming at satisfying all customer groups is likely to disappoint one or the other customer in some dimension" (p. 540). According to Burns (1994), if the expectations of its key stakeholders are not defined and actively managed, internal audit might be at risk of becoming a "jack of all trades" and a "master of none" (p. 112; Beasley et al., 2009).

In academic literature, the problem of the discrepancy between the key stakeholders' interests and expectations is known as the *serving two masters*-problem. The problem arises because an independent board is assumed to act on behalf of shareholders, wanting internal audit to focus on assurance services, whereas senior management is presum-

ably more concerned with the operational business, preferring internal audit to concentrate on consulting services (Stewart & Subramaniam, 2010; Hermanson & Rittenberg, 2003; IIARF[19], 2003). Following *principal agency theory*, senior management may also seek to avoid audits of their own work and therefore attempt to direct internal audit towards consulting. When internal audit audits the work of senior management, the so called *auditing the boss*-dilemma may have serious ramifications for internal audit's independence and objectivity – which are "to the profession of internal auditing what the Hippocratic Oath is to the practice of medicine" (Christopher et al. 2009, p. 201; Ahmad & Taylor, 2009; Mutchler et al., 2001; Mutchler et al., 2003).

From a theoretical point of view, *role theory* provides further cues in terms of why the dual reporting relationship can decrease internal audit's performance. Central concepts of *role theory* include *role ambiguity*, *role conflict* and *role overload* that tend to occur if the expectations placed on internal audit lack in clarity, are incompatible with each other or if too many expectations exist, respectively. While *role ambiguity* can lower the "predictability of role performance outcomes", *role conflict* was found to harm internal audit's ability to fulfill its mandate and to lead to increased work-related stress (Miles & Perreault., 1976, p. 174; Fazli et al., 2013; Ahmad & Taylor, 2009; Van Peursem, 2005; Lee Larson, 2004). Against the background of these considerations, Chambers and Odar (2015) postulated that internal audit "needs to cut the umbilical cord that ties it to management" since the "accepted 'dual reporting' of internal audit is flawed" (p. 34).

3.4 Chapter summary

This chapter was concerned with the theoretical background of corporate governance in Switzerland, including an outline of the regulatory context, a description of the *Three Lines of Defense* model and its main functions and activities as well as the relationship between internal audit and the board and senior management.

Organizations must generally design their governance approach in such a manner that each governance function or activity can fulfill their role in the most effective manner and add value to the organization. The regulatory and institutional governance context

[19] IIARF is short for *The Institute of Internal Auditors Research Foundation*.

in Switzerland, despite allowing organizations great flexibility, strengthens the role and responsibilities of the board members who are responsible for determining and implementing strategy and control. The board members direct and supervise senior management as its agent. Internal audit, which is mandatory for Swiss banks and insurance companies, acts likewise on behalf of the board to monitor the performance of senior management and to provide assurance regarding the work of the *First* and *Second Line of Defense*.

Frequently, internal audit has a dual reporting line, namely a functional reporting line to the board of directors and an additional administrative reporting line to senior management. Both because of its broad and aspiring mandate determined by the IIA and the dual reporting relationship, internal audit needs to foster good working relationships with its key stakeholders whose needs and expectations towards internal audit may diverge. If this is the case, the performance and value added of internal audit could be reduced due to lower objectivity and the potential ramifications of *role ambiguity*, *role conflict* and *role overload*.

4 Internal communication

This chapter introduces the topic of internal communication that is one particular form of organizational communication besides public relations, public affairs, environmental communication, investor relations, labor market communication and corporate advertising (Ruck, 2015; Hallahan et al., 2007; Dawkins, 2005; Grunig & Hunt, 1984). The two specific types of internal communication *internal line management communication* and *internal corporate communication* are of particular interest in the context of this thesis.

Internal line management communication thereby occurs between line managers and employees and deals with the roles, responsibilities, performance expectations as well as the performance appraisal of employees. The main goal associated with *internal line management communication* is to familiarize employees with their work targets and to ensure that these targets are adequately met. By contrast, *internal corporate communication* refers to the communication between strategic managers and employees and revolves around organizational matters, such as corporate objectives, new developments and planned initiatives. Accordingly, Welch and Jackson (2007) defined *internal corporate communication* as "communication between an organization's strategic managers and its key stakeholders, designed to promote commitment to the organization, a sense of belonging to it, awareness of its changing environment and understanding of its evolving aims" (p. 186).

Taking into account the aforementioned considerations, the communication between internal audit and the board and senior management might be classified as a combination of *internal line management communication* and *internal corporate communication*. As internal audit pursues a special mandate according to the *IIA Definition*, which includes adding value to the organization and ensuring the continuous improvement of the organization's processes, the communication with the board and senior management should not be limited to work targets and performance appraisals but it should also touch upon relevant aspects regarding the strategy and key risks of the organization.

Based on this preliminary understanding, the following sections present the objectives and benefits of internal communication and outline the communication process, an overview of the communication channels, the differences in terms of the direction of the

information flow as well as possible organizational influences on and barriers to the effectiveness of internal communication.

4.1 Purpose and objectives

Principally, internal communication serves as an instrument for the board and senior management to comprehend and handle the "interactions and relationships between stakeholders at all levels within organizations" (Welch & Jackson, 2007, p. 183), facilitating the "processes of interaction, means by which members create shared meaning, and strategic coordination of goal-oriented activities" (Heath & Bryant, 2000, p. 298). Besides its function to build social capital and trust among organizational members, internal communication also helps to "turn strategy into action by engaging, informing and directing employees" (Quirke, 2008, p. 31). Mom et al. (2007) further established that internal communication is an essential prerequisite for learning and effective decision-making since it can "trigger knowledge recipient managers to revise current beliefs, to search for, develop, and experiment with various novel solutions regarding problems, and to redefine strategic decisions" (p. 915). Welch and Jackson (2007) summarized the main objectives of internal communication in organizations as follows (p. 188):

- "Contributing to internal relationships characterized by employee commitment";
- "Promoting a positive sense of belonging in employees";
- "Developing their awareness of environmental change";
- "Developing their understanding of the need for the organization to evolve its aims in response to, or in anticipation of, environmental change".

In order to meet these desired objectives, it is obligatory for the board to establish an appropriate process for internal communication, which is the focus of the following section.

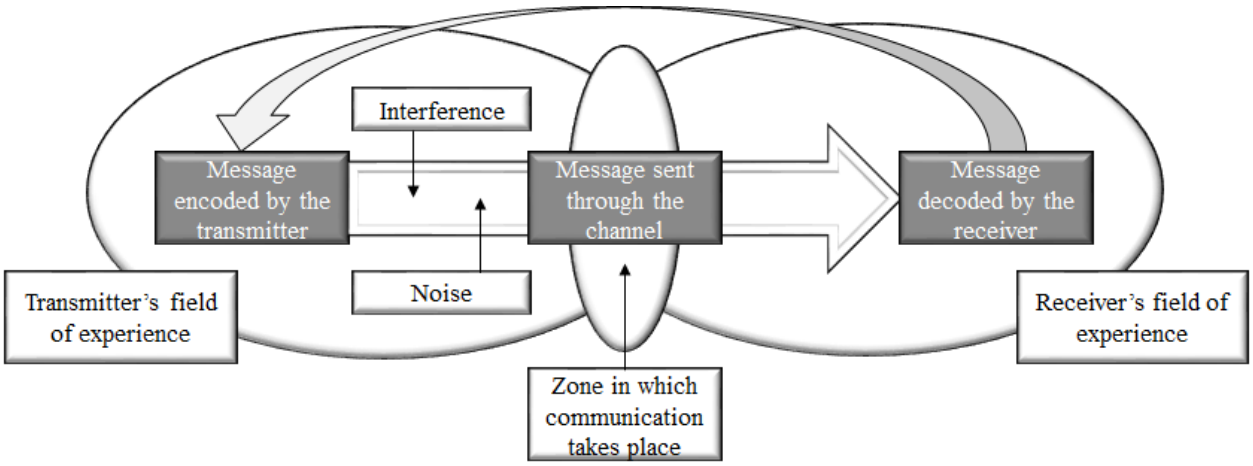
4.2 Communication process

In order be able to evaluate the *constituents*, *antecedents* and *outcomes* of effective internal communication between internal audit and the board and senior management, one must comprehend the communication process that can be portrayed through different

communication models. According to Shannon and Weaver's model of communication (1949), which is a simplistic linear model of communication that does not take into account feedback loops between the information sender and the receiver, any information is first generated by an information source and subsequently transferred to a transmitter that encodes the message into signals. The message, now encoded, travels along the communication channel to the receiver who decodes the signal back into a message. Noise can thwart the way of the message along the communication channel and even falsify the information.

Later, Schramm (1954) further developed the ideas of Shannon and Weaver and devised a communication model that considers the possible interaction between the sender and the receiver, portraying the two communication participants equally as encoders, interpreters and decoders of the message. Consequently, both participants send and receive messages and are capable of processing and incorporating feedback while decoding the message. Schramm (1954) likewise incorporated in his model that the respective field of experience plays an important role for the encoding and decoding phase because "people respond idiosyncratically to messages as a function of their personality, group influences, and the situation under which the communication occurs" (Heath & Bryant, 2000, p. 66). Both the Shannon and Weaver model (1949) and the Schramm model (1954) of communication rely on the assumption that only two participants are involved in the communication process, namely the sender and the receiver of the message, which is a simplification but helpful for understanding the interpersonal dynamic between the sender and the receiver in a bilateral communication context.

Figure 6: Schramm's model of communication[20]



Like Schramm, Berlo (1960) further developed the model of Shannon and Weaver (1949) and complemented the main elements of their model – sender, message, channel and receiver – with attributes that he thought influenced each element. Additionally, he accounted more in detail for the social context in which the communication takes place. His model is often referred to as the *SMCR model of communication*, whereby the capital letters stand for "sender", "message", "channel" and "receiver", respectively. The following table represents the attributes that Berlo assigned to each of Shannon and Weaver's main elements.

Table 3: SMCR model of communication

Sender	Message	Channel	Receiver
• Communication skills	• Content	• Hearing	• Communication skills
• Attitudes	• Elements	• Seeing	• Attributes
• Knowledge	• Treatment	• Touching	• Knowledge
• Social system	• Structure	• Smelling	• Social system
• Culture	• Code	• Tasting	• Culture

[20] Adapted from Blythe (2009).

4.3 Communication channels

As explained in the previous section, the communication channel is an integral element of the internal communication process that can have different shapes and forms.

In fact, there is a multitude of channels that can be used for internal communication but not all of them are associated with the same level of communication effectiveness. The following table illustrates a hierarchy concerning the effectiveness of internal communication channels in relation to their interactivity. It can be inferred that channels that allow higher levels of interaction and engagement also tend to be associated with higher communication effectiveness. Although less interactive channels, such as email or voicemail, are the most efficient choice (time, effort, money etc.), they are not necessarily the best, most effective way to communicate.

Table 4: Communication channel and effectiveness[21]

Effectiveness		
High	1. Face-to-face, individual meetings	
	2. Face-to-face, small group meetings	
	3. Face-to-face, town hall meetings	
	4. Live webcast/video- or teleconference meetings	
	5. Interactive text-based intranet meetings with polling	
	6. Video to the desktop/podcasts	
	7. Intranet postings	
	8. Non-digital text/visual materials	
	9. Email	
Low	10. Voicemail	
Interactivity	*High*	*Low*

Conrath (1973) additionally found that individuals that were physically close to each other generally preferred face-to-face communication because this kind of communication involves more direct feedback and enables the transfer and understanding also of nonverbal messages. However, with increasing physical distance and associated communication costs for face-to-face communication, the preference for telephone interactions increased. Conrath (1973) likewise asserted that only when documentation of the

[21] Adapted from Goodman & Hirsch (2010).

communication process or its results was necessary, written communication, for example through emails, was preferred over face-to-face communication. Hence, the final choice of the communication channel seems to depend on a combination of the channel's effectiveness, its associated cost as well as the need to document and record the information that is exchanged.

Besides the previous comparison of the different communication channels, it is further relevant to comprehend the difference between formal and informal communication. The former, formal communication, is usually characterized by "officially designated channels of message flow between organizational positions" and established through policies or organizational charts (Papa et al., 2008, p. 51). It can occur either top-down from the upper to the lower hierarchical levels, bottom-up from the lower to the upper levels of the organization or horizontally between employees of the same hierarchical level. When formal communication is not sufficient, if it is too ambiguous or when social capital is supposed to be built, informal communication is used.

Informal communication happens more on an ad hoc and spontaneous basis and is by contrast to formal communication not restricted to officially designated channels. Although "performance standards, member expectations, and values at the workgroup level" can be conveyed through informal communication, informal communication still predominantly serves to meet personal or social needs (Papa et al. 2008, p. 61). In addition, informal communication is useful for integrating diffused knowledge through "creating a high willingness for cooperation and knowledge sharing based on nonreciprocal pro-social behavior" (Willem & Buelens, 2009, p. 152; Widén-Wulff & Ginman, 2004; Bogenrieder & Nooteboom, 2004; Jarvenpaa & Staples, 2001).

4.4 Direction of the information flow

Since the research phenomenon deals with both the upward communication from internal audit to the board and senior management as well as the downward communication from the board and senior management to internal audit, this section serves to explain the difference between the two communication directions and their implications for internal audit, the board and senior management.

In general, it can be distinguished between vertical and horizontal internal communication, whereby vertical communication refers to communication between superiors and subordinates and horizontal communication happens between peers on the same hierarchical level. Bartels et al. (2010) found that vertical communication is often "work-related and travels top-down and bottom-up within the organization's hierarchy" (p. 213).

With respect to downward communication, this type of communication is often used to share information "about the organization's strategy or objectives and current developments" (Bartels et al., 2010, p. 213). With respect to internal control, downward communication helps to instruct employees and to give them "a clear message from senior management that control responsibilities must be taken seriously" (COSO, 2013, Executive Summary, p. 5). According to Katz and Kahn (1978), usually one of the following five aspects or messages are communicated from the upper to the lower levels of the organization:

- Work instructions;
- The purpose of the work or task;
- Procedures and practices;
- Feedback concerning work performance;
- Organizational ideology.

Problems with downward communication may arise when either too much information is communicated, resulting in information overload, or when the wrong information is given to the employees. Another problematic area pertaining to downward communication is overreliance on mediated written or electronic information compared to direct and face-to-face interactions that are richer in information content (Papa et al., 2008, p. 53)[22].

By contrast, upward communication happens when the communication is initiated by subordinates to their superiors. Upward communication provides employees with opportunities for participative decision-making and increases their identification with their organization or with their work. It may moreover help the receiver of the information to

[22] Also refer to section 4.3.

effectively and efficiently problem-solve, to make better decisions and to advance organizational practices. (Papa et al., 2008)

Whereas downward communication tends to occur regularly through officially designated channels, upward communication is less frequent because directors and senior managers are usually shielded from information overload from too many sources. On the end of the employees, this may lead to frustration and fading commitment. Papa et al. (2008) pointed out that "lack of commitment to decisions and conflicts over implementation arise at lower levels where members have been excluded from the decision-making progress" (p. 56). Furthermore, missing trust can negatively affect the accuracy with which information is communicated upward to superiors (Glauser, 1984).

4.5 Relevant organizational influences

Referring to the communication model by Shannon and Weaver (1949) from section 4.2, the effectiveness of internal communication may be influenced by the field of experience of the sender/receiver or by other noise sources that interfere with the transfer of the message. In the context of organizational governance, the extant academic literature suggested that organizational structure and organizational culture could be possible influences on the effectiveness of internal communication. For that reason, the most important aspects regarding organizational structure and organizational culture will be illustrated in the following sections.

4.5.1 Organizational structure

Since the organizational structure may have a great impact on the communication channel as well as on how the relationships between organizational members develop, organizational structure should be illustrated as a first important influencing factor on the effectiveness of communication between internal audit and the board and senior management (Pennings, 1992). The following sections consequently deal with presenting the most important concepts related to the organizational structures and conceptually linking organizational structure to effective internal communication.

4.5.1.1 Definition and relationship with internal communication

The research of organizational structures was advanced through the works of Frederick Taylor with his *Principles of Scientific Management* (1911) and Max Weber with his essays on bureaucracy (1946) that concentrated on specific attributes of the formal organization including structure, specialization, predictability and stability, rationality and democracy.

Organizational structure was described by Scott (1961) as "the logical relationships of functions in an organization, arranged to accomplish the objectives of the company efficiently" (p. 9). Walton (2005) understood organizational structure similarly, namely as the "arrangement of activity patterns in organizations" that is supported through rules, procedures and the regulation of authority (p. 574). Connecting organizational structure to internal communication, Daft and Lengel (1986) pointed out that structure refers to "the allocation of tasks and responsibilities to individuals and groups within the organization and the design of systems to ensure effective communication and integration of effort" (p. 559).

Organizational structure was found to significantly affect internal communication in many ways, for example through shaping the pattern and frequency of communication and through determining the "channels along with strategic information will flow" (Zheng et al., 2010, p. 765; Bower, 1970). Organizational structure helps to "facilitate the processing of information" so that the right information is obtained by the right parties when they need it and uncertainty is reduced (Frederickson, 1986, p. 281; Daft & Lengel, 1986, p. 559). Therefore, it can be stated that organizational structure is a central lever for effective communication. It should be established in such a manner that the timely and targeted exchange of information among the relevant parties is facilitated.

4.5.1.2 Key attributes

Over the years, researchers tended to focus on specific key attributes of organizational structure that reflected the ideas of Taylor and Weber. Commonly studied attributes of organizational structure are *formalization*, *centralization*, *specialization* and the *span of control* (Conrad & Poole, 2005).

Table 5: Attributes of organizational structure

Attribute	Description
Formalization	Describes the extent to which roles and responsibilities are determined and procedures are defined in a standardized form (Willem & Buelens, 2009, p. 152; Schminke et al., 2000).
Centralization	Refers to "the extent to which decision-making power is concentrated at the top management level in the organization" (Willem & Buelens, 2009, p. 152; Hage & Aiken, 1967).
Specialization	Is the extent to which specific training and skills are necessary to perform a certain job or task.
Span of control	Refers to the number of employees reporting/accountable to one superior.

Linking these attributes to internal communication, Willem and Buelens (2009) found that *formalization* and *centralization* were negatively related to knowledge sharing because knowledge tends to be more easily dispersed in casual working environments in which power is decentralized and the superior is physically closer. *Centralization* was furthermore associated with breeding an "environment of fear, distrust and internal competition" (Willem & Buelens, 2009, p. 152; Chen & Huang, 2007). S*pecialization* entails that specific knowledge is often uniquely owned by one individual so in order to be able to use this knowledge effectively in the organization, it must be communicated to the relevant areas (Willem & Buelens, 2009, p. 153; Mintzberg, 1989). The *span of control* is significant because it can restrict the time that is available for communication as well as influence the communication style of the superior.

4.5.1.3 Further concepts

Organizational structure can likewise be interpreted as a network of interdependent individuals that communicate with each other to be able to work effectively and efficiently (Jablin & Krone, 1987). To understand how network structures might affect the communication between internal audit and the board and senior management, two concepts are explained in this section in more detail, namely *centrality* and *interdependence*.

Centrality

The specific role of the individual in a network depends on their position or, in other words, on their centrality (Borgatti, 2005; Brass & Burkhard, 1992; Freeman, 1978). If

an individual has many personal ties in the organization, they have a high so-called *degree centrality*. Another example is when an individual is particularly close to other individuals. This kind of central position in the organizational network is then called *closeness centrality*. Lastly, if an individual assumes the role of the gatekeeper, which is the case if they pass on or filter information on the path from one individual to another, this individual has a high level of *betweenness centrality*. In the context of the research phenomenon, internal audit is in close contact with the board and senior management as well as with the *Second Line of Defense*. Therefore, it can be stated that internal audit has a high *degree centrality*. Since it also filters less relevant information before the final report is passed on to the board or to senior management, internal audit likewise assumes an important gatekeeper role and possesses a high *betweenness centrality*.

Interdependence

The level of *interdependence* in the relationship between two individuals, also referred to as *coupling*, is a central structural characteristic in the context of internal communication in organizations. The highest level of *interdependence* is given when the relationship between two employees is reciprocal so that the individuals mutually rely on each other's input to produce output (Conrad & Poole, 2005, p. 228). Internal audit, the board and senior management can be presumed to be *reciprocally interdependent* so that effective communication between them represents an important lever for promoting the effectiveness of internal audit and for supporting the performance of the board and senior management.

4.5.2 Organizational culture

Besides organizational structure, organizational culture may also have a profound influence on the way organizational members communicate with each other. Conversely, communication is an integral part of organizational culture so that internal communication and organizational culture clearly share a reciprocal relationship. The subsequent sections illustrate in more detail the connection between organizational culture and internal communication and present the key categories of the *competing values framework* (CVF) of organizational culture that is a frequently used instrument to classify and operationalize organizational culture for empirical studies.

4.5.2.1 Definition and relationship with internal communication

Bormann (1983) stated that culture in general relates to the "ways of living, organizing, and communing built up in a group of human beings and transmitted to newcomers by means of verbal and nonverbal communication" (p. 100). Moreover, culture "exists when people come to share a common frame of reference for interpreting and acting toward one another and the world in which they live", whereby this shared frame of reference may be the common language, values, beliefs or a similar interpretation of events (Papa et al. 2008, p. 128).

Organizational culture consequently refers to the shared assumptions, values and norms in an organization (Schein, 1991; Barney, 1986, p. 657). The concept of organizational culture is different from the concept of the control environment, which may also pertain to additional aspects, such as standards, processes and structures for internal control, integrity and ethical values of the organization, assignment of authority and responsibility, hiring, developing and training policies or performance measurement and accountability (COSO, 2013, Executive Summary, p. 4).

The *Tone at the Top* has a considerable influence on the organizational culture because it helps to create social order, continuity, collective identity and commitment and affects how individuals interact with each other (McAleese, cited in Ruck, 2010, p. 13; Barney, 1986). In addition, organizational culture may serve as a preventive control mechanism that promotes employees' identification with the organizational norms and values (Christensen et al., 2008, p. 151; Scott, 1961, p. 13). Due to influencing work-related behaviors such as productivity, organizational culture can also be a valuable source of competitive advantage (Barney, 1991).

The relationship between organizational culture and internal communication can be described as reciprocal because organizational culture affects the ways in which organizational members communicate and communication in turn shapes and determines the social context inside the organization. Welch and Jackson (2007) agreed with this, highlighting that "internal communication influences corporate culture since it represents the culture" (p. 192).

Van den Hooff and de Ridder (2004) suggested a positive relationship between the communication climate and information sharing. Furthermore, Chen and Huang (2007) found that a culture characterized by higher levels of trust, better communication and coordination led to better knowledge management. Besides, it was argued that trust is especially important for the relationship between the two communication parties and the effectiveness of upward communication because "higher levels of trust (…) should produce greater accuracy in upward flow" (Glauser, 1984, p. 628).

4.5.2.2 Key categories

To operationalize the concept organizational culture for empirical studies, the *competing values framework*, or CVF in short, has emerged as a popular organizing taxonomy using two dimensions (Cameron & Quinn, 2011; Goodman et al., 2001; Hooijberg & Petrock, 1993). The dimensions are *external* versus *internal focus* and *flexibility* versus *stability*, whereby each of the resulting four categories have different characteristics in terms of *thrust*, *means* and *ends*.

E*xternal* versus *internal focus* refers to the spectrum "from an internal micro emphasis on the well-being and development of people in the organization to an external macro emphasis on the well-being and development of the organization itself" (Quinn & Rohrbaugh, 1983, p. 369). In other words, the first dimension measures whether the organizational culture is mostly affected by factors outside or inside the organization. *Flexibility* versus *stability* indicates whether the organizational culture is oriented more towards autonomy or towards monitoring and control. *Thrust* expresses the main behavioral driver behind each cultural category such as collaboration or competition, whereas *means* relates to the mechanisms that help to achieve the *ends*, which are the desired organizational outcomes. Based on the two dimensions *external* versus *internal focus* and *flexibility* versus *stability*, four categories of organizational culture are determined, namely the *clan culture*, the *adhocracy culture*, the *market* culture and finally the *hierarchy culture*.

The *clan culture* fosters collaboration and trust between employees. It is moreover internally focused and thrives on a flexible organizational structure. The *adhocracy culture* is also supported by a flexible organizational structure like the *clan culture*, however it is externally oriented and characterized by creativity, innovation and adaptability.

The *market culture* shares the external focus with the *adhocracy culture* but relies on a stable organizational structure in order to enhance the organization's competitiveness and financial profitability. Consequently, in an organization in which the *market culture* is predominant, employees are frequently rewarded based on how they perform and contribute to the achievement of organizational objectives. Lastly, the *hierarchy culture* is internally focused and relies on the assumption that internal control and structural stability increase conformity, predictability and efficiency (Hartnell et al., 2011).

Table 6: The competing values framework

	Flexibility		
Internal focus	"Clan" **Thrust: Collaborate** Means: Cohesion, participation, communication, empowerment Ends: Morale, people, development, commitment	"Adhocracy" **Thrust: Create** Means: Adaptability, creativity, agility Ends: Innovation and cutting-edge output	External focus
	"Hierarchy" **Thrust: Control** Means: Capable processes, consistency, process control, measurement Ends: Efficiency, timeliness, smooth functioning	"Market" **Thrust: Compete** Means: Customer focus, productivity, enhancing competitiveness Ends: Market share, profitability, goal achievement	
	Stability		

The fact that the CVF classifies organizational culture according to the just presented four categories does not mean that several cultural dimensions cannot coexist simultaneously. Instead, the CVF suggests that organizational culture may manifest with different intensities in the different dimensions.

4.6 Structural and relational barriers

As Shannon and Weaver (1949) hinted at with their element of the *noise source* in the communication process[23], there are possible structural and relational barriers to the effectiveness of internal communication that need to be understood and acknowledged. In

[23] Also refer to section 4.2.

this respect, Conrad and Poole (2005) elaborated an overview of these barriers that is presented in the following table.

Table 7: Communication barriers[24]

Structural barriers	Relational barriers
• Processes of interpreting messages • Number of links in the communication chain • Trained communication – Incapacity – Perceptual sets – Language barriers – Large size of the organization • Problems inherent in written communication • Problems in the timing of messages	• Power, status differences • Mistrust • Subordinates' mobility aspirations • Inaccurate perceptions of the information needs of others • Norms or actions that discourage requests for clarification • Sensitivity of topics

Bearing these structural and relational barriers in mind, it should be discussed in how they might play out in the context of the research phenomenon.

Of the structural barriers that were mentioned, the number of links in the communication chain most likely does not a play significant role due to the direct reporting line of internal audit to the board, respectively to senior management. Therefore, the likelihood of misconception or omission of important information is reduced. Communication skills depend on innate talent or personality traits as well as on the training provided by the organization (trained communication). If an organization is affiliated with the IIA and its internal audit has to comply with the IPPF in terms of proficiency and due professional care, lack of training or persistent language barriers might be less of an issue. By contrast, problems concerning the interpretation of messages, issues in written communication as well as problems with respect to the timing of messages can naturally always interfere with effective communication between internal audit and the board and senior management.

[24] Adapted from Conrad & Poole (2005).

Concerning the relational barriers, power and status differences might thwart the communication process, despite internal audit being positioned directly below the governance body and pursuing a value-oriented mandate that benefits its superiors. The specific extent to which power and status differences potentially play a role is influenced by further factors, such as the motivation of senior management – self-interest versus company-interest – or the independence of the board from senior management. Mistrust must always be counted in as a possibility. The desired perception of internal audit as a *Trusted Advisor* underlines the crucial role of a good working relationship for effective communication. Internal auditors may further have mobility aspirations to become part of senior management and use their mandate as a management training ground to advance their careers. If this is the case, previous researchers noted a potential threat to internal auditors' objectivity (Messier et al. 2011; Abbott et al., 2010; Christopher et al. 2009; Oxner & Oxner, 2006; Goodwin & Yeo, 2001). Inaccurate perceptions of information needs as well as a high sensitivity of topics are both very common and relevant barriers that apply to the communication between internal audit with the board and senior management. The extent to which information requirements are perceived accurately and the willingness to clarify questions can thereby be influenced by the previous communication experiences of the involved parties with each other. The sensitivity of topics is generally high because internal audit provides ultimate assurance on the work of senior and operational management (Christopher et al., 2009; Goodwin & Yeo, 2001). To conclude, it can be stated that most of the structural and relational barriers presented by Conrad and Poole (2005) likely play a role in the context of the research phenomenon.

4.7 Chapter summary

In this chapter, the topic of internal communication in organizations was presented and the most relevant aspects for the research phenomenon were clarified. It was highlighted that internal communication is a form of corporate communication that is linked to positive workplace-related outcomes such as higher employee identification and commitment. It can occur vertically between superiors and subordinates or horizontally between peers, whereby vertical communication is mostly used to clarify tasks for subordinates or to provide the superior with relevant information. The communication channel may have a strong influence on the effectiveness of internal communication, whereby more personal and interactive channels are generally preferred except when the geographical distance is too high or there is a need for documentation. Moreover, it was touched upon

that internal audit has very specific requirements for its internal communication with the board and senior management that are detailed in the IPPF and mandatory for IIA member organizations. Conversely, the board and senior management have practically no formalized requirements since their responsibility to communicate effectively is implicitly derived from their professional position and level of accountability in the organization. As a result, communication that is initiated by internal audit is likely to be more standardized, regular and routine even though the board and senior management should likewise initiate exchange and provide internal audit with relevant information concerning strategic insights and high-priority risks. Moreover, it was explained how organizational influences, in particular the organizational structure and the organizational culture, can affect the effectiveness of internal communication. Considerable structural and personal barriers to effective communication included misunderstandings in written communication, bad timing and mistrust between the sender and the receiver of the information.

5 Methodological approach

This chapter describes the methodology that was applied to evaluate the research phenomenon and the three research questions empirically. The previous theoretical chapters are synthesized and hypotheses are developed, the appropriate research strategy is presented and the research design, the research instrument, the target population as well as the composition of the final sample are explained. Subsequently, the methods that were employed for the data preparation and the data analysis are illustrated.

5.1 Theoretical synthesis and hypotheses development

This section is concerned with describing the conceptual framework for the empirical analysis. In order to be as concise as possible, references to previous chapters that elaborated in detail on a specific theoretical aspect are made whenever possible. Since the first research question regarding the *constituents* of effective communication is an exploratory question, the conceptualization for this research question included a combination of descriptive survey questions with predetermined answer possibilities and open survey questions. By contrast, the second and the third research question could be viewed through the lens of sufficiently mature management theories so that they were suitable for statistical testing based on hypotheses. How these hypotheses were developed is explained in detail in sections 5.1.2 and 5.1.3.

5.1.1 Synthesis for RQ1 (Constituents)

As mentioned above, the first research question was investigated using descriptive and open survey questions since its exploratory nature was less suited for statistical tests. In order to evaluate how practitioners understand effective communication with the board and senior management, the open questions were asked in how far the communication quality criteria proposed in IIA Standard 2420 – *Quality of Communications* apply in practice, which communication channels are preferred and how the current level of satisfaction is regarding the communication content, quality and frequency. An additional open question was asked to find out which *constituents* of effective communication the respondents would identify irrespective of any cues from previous survey questions.

5.1.2 Synthesis and hypotheses for RQ2 (Antecedents)

As illustrated in the second chapter, the *theory of planned behavior* describes specific antecedents for the performance of a behavior, namely *attitude* towards the behavior, *subjective norm*, *perceived behavioral control* and *behavioral intention* (Ajzen, 1985, 1991). In previous studies, the *theory of planned behavior* was for example applied to predict user intention for information systems (Mathieson, 1991), leisure choice (Ajzen & Driver, 1992), consumer adoption intentions (Taylor & Todd, 1995), health-related behaviors (Godin & Kok, 1996), unethical conduct (Chang, 1998) or electronic commerce adoption (Pavlou & Fygenson, 2006). In the context of communication, Cheng et al. (2006) used the *theory of planned behavior* to predict negative word-of-mouth communication intention. Following the theoretical rationale of the *theory of planned behavior*, the following five hypotheses were formulated:

H1: There is a significant positive relationship between the attitude of internal auditors towards communication with (a) the board, (b) senior management and the behavioral intention of internal auditors towards communicating effectively with (a) the board and (b) senior management.

H2: There is a significant positive relationship between a subjective norm that requires effective communication with (a) the board, (b) senior management and the behavioral intention of internal auditors towards communicating effectively with (a) the board and (b) senior management.

H3: There is a significant positive relationship between the perceived behavioral control of internal auditors regarding the effectiveness of communication with (a) the board, (b) senior management and the behavioral intention of internal auditors towards communicating effectively with (a) the board and (b) senior management.

H4: There is a significant positive relationship between the behavioral intention of internal auditors towards communicating effectively with (a) the board, (b) senior management and the effectiveness of communication with (a) the board and (b) senior management.

H5: There is additionally a direct and significant positive relationship between the perceived behavioral control of internal auditors regarding the effectiveness of communication with (a) the board, (b) senior management and the effectiveness of communication with (a) the board and (b) senior management.

5.1.3 Synthesis and hypotheses for RQ3 (Outcomes)

Like the *antecedents*, also the *outcomes* of effective communication were analyzed through hypotheses that are derived and presented in this section. The influence that effective communication might have on the performance of internal audit, the board and senior management will be illustrated before evaluating the potential effects for the organization as a whole. This stepwise approach was used to avoid confusing different levels of analysis because effective communication theoretically affects the individual first, for example through higher commitment and work performance, before the individual can in turn influence higher-level outcomes, such as governance effectiveness.

As illustrated in section 4.1, effective communication has been associated with many positive work-related outcomes, including increased employee commitment, engagement and performance (Abu Bakar et al., 2010; Allen, 1992; Kahn, 1992; Putti et al., 1990). Trombetta and Rogers (1988) for example demonstrated that the degree to which individuals reported a congruency between the information that they wished to receive and the information that they actually received was positively correlated with their level of work-related commitment. Bartels et al. (2010) as well as Smidts et al. (2001) moreover suggested a positive relationship between communication and employees' identification with the organization. Besides, De Ridder (2004) concluded that effective communication led to a more positive employee attitude as well as higher loyalty towards, identification with and involvement in the organization.

With regard to commitment as a construct, the researcher may distinguish between three different types, namely *affective commitment*, which relates to the emotional attachment of employees, *continuance commitment* as an indicator of the cost associated with leaving the organization, and *normative commitment* that refers to the sense of obligation to stay with the organization (Welch & Jackson, 2007; Meyer & Allen 1997). In the context of the research phenomenon at hand, *affective commitment* could be regarded as the most relevant type of commitment because it is most susceptible to the effectiveness of internal communication and the quality of the working relationship between internal audit and its key stakeholders. Based on the above argumentation, hypothesis 6a was formulated as follows:

H6a: There is a significant positive relationship between the effectiveness of downward communication by (a) the board, (b) senior management and the affective commitment of internal auditors.

Affective commitment was moreover shown to have a significant positive relationship with beneficial workplace behaviors, most importantly job performance (e.g. Taylor et al., 2012; Poon, 2012; Vandenberghe et al., 2002; Meyer et al., 1989). Thus, hypothesis 6b was put forward accordingly:

H6b: There is a significant positive relationship between the affective commitment of internal auditors and internal audit performance.

Principal agency theory suggests that effective upward communication by internal audit may reduce potential information asymmetries and improve the decision-making capability of the board (Adams, 1994; Eisenhardt, 1989; Jensen & Meckling, 1976). According to various researchers who found that internal audit also has a "supportive role" towards senior management, it could be assumed that both the board and senior management benefit from effective upward communication by internal audit (Sarens & De Beelde, 2006a, p. 223; Spraakman, 1997). Conversely, due to the previously explained mutual interdependence between internal audit and its key stakeholders[25], internal audit relies on effective downward communication by the board and senior management for support and input. In line with this argumentation, the seventh hypothesis was developed in the following manner:

H7: There is a significant positive relationship between effective communication between internal audit and the board and senior management and the performance of internal audit, the board and senior management.

After the seventh hypothesis aimed to investigate the relationship between effective communication and increased performance, the eighth hypothesis had the purpose to analyze whether effective communication moderates the relationship between the performance of internal audit and the performance of the board, respectively the performance of senior management, in both directions.

[25] Also refer to sections 3.3 and 4.5.1.3.

The following ideas and aspects supported to the supposed moderated relationship: Since effective communication can generally be regarded as the "means" or the "lever" through which internal audit's findings are conveyed to the board and senior management, effective communication is a prerequisite for internal audit to support the performance of the board and senior management. Conversely, a high-performing board and senior management serve internal audit only if important strategic and control-related information is communicated effectively and important matters, such as the approval of the internal audit plan, are discussed with internal audit in a timely manner. According to the underlying assumptions of *systems theory*[26] and the *knowledge-based view of the firm*[27], high performance of internal audit, the board and senior management alone has only a small effect on the performance of other governance functions and activities if there is a lack of effective communication to integrate hierarchically dispersed knowledge and create knowledge synergies. The fact that internal audit, the board and senior management can be considered as interrelated and tightly coupled governance functions/activities[28] suggests that each of them requires the knowledge and communicated input from at least one other activity to perform well (Rediker & Seth, 1995, p. 87).

Building upon this argumentation, the eighth hypothesis presumed that effective communication does not only have a direct relationship with increased performance (see H7) but that the performance of internal audit, the board and senior management only leads to an increased performance of the respectively other governance functions/activities if the mutual/bilateral communication is effective:

H8: The effectiveness of communication moderates the relationship between internal audit performance and board performance, respectively between internal audit performance and senior management performance.

Lastly, it should be determined whether effective communication also affects the effectiveness of governance indirectly through enhanced internal audit, board and senior management performance.

[26] Also refer to section 2.1.
[27] Also refer to section 2.3.
[28] Also refer to section 4.5.1.3.

Since the board is the most important governance organ in Switzerland with the principal responsibility for direction and control, higher board performance should theoretically result in higher governance effectiveness. It can also be presumed that senior management performance positively influences the effectiveness of corporate governance because senior management is ultimately accountable for the implementation of the strategy determined by the board and for the effectiveness of the risk management and internal control systems[29]. Concerning internal audit and despite the ongoing controversy regarding internal audit's actual value contribution[30], many researchers proposed a positive association between internal audit performance and governance effectiveness as well. In this respect, it was for example asserted that "the effectiveness of internal audit greatly contributes to the effectiveness of each auditee in particular and the organization at large" (Mihret & Yismaw, 2007, p. 471; Dittenhofer, 2001a). Furthermore, internal audit was previously linked to providing access to information more quickly and detecting issues earlier, promoting the effectiveness of internal control, respectively of risk management, both of which are subordinate elements of corporate governance (COSO, 2013; Mihret & Yismaw, 2007; Xiangdong 1997). Consequently, the ninth hypothesis was formulated as follows:

H9: There is a significant positive relationship between the performance of the board, senior management, internal audit and governance effectiveness.

5.2 Research strategy

According to Edmondson and McManus (2007), the more mature the state of prior theory and research is, the more quantitative the research methodology tends to be. They differentiated between three categories for the state of prior theory and research, namely *nascent research*, *intermediate research* and *mature research*.

In *nascent research*, the researcher usually asks open questions about the research phenomenon and gathers qualitative data from interviews or other documents. In this case, the researcher also tries to identify patterns by employing content analysis. By contrast, *intermediate research* requires that the researcher proposes specific relationships between already established constructs and integrates previously separated bodies of work

[29] Also refer to section 3.2.5.
[30] Also refer to section 1.2.

by using both quantitative and qualitative data. The contributions that result from *intermediate research* mostly include provisional models, frameworks or new constructs incorporated into existing models. Lastly, in *mature research*, the researcher focuses on testing hypotheses through statistical inference and standardized procedures to verify, falsify or add to an established theory (Edmondson & McManus, 2007, p. 1168).

In this case, the state of prior theory and research falls in the category of *intermediate research*. Following the classification and the recommendations put forward by Edmonson and McManus (2007), a *mixed methods strategy* was selected comprising quantitative and qualitative elements.

Mixed methods research can generally be defined as "the class of search where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (Johnson & Onwuegbuzie, 2004, p. 17). This research strategy facilitates the analysis of interdisciplinary, complex and dynamic phenomena and often combines deductive and inductive methods as a form of triangulation (Hussein, 2015; Johnson & Onwuegbuzie, 2004; Johnson & Turner, 2003). Importantly, a *mixed methods strategy* also enables the researcher to exploit the strengths and mitigate weaknesses of different methodologies (Johnson & Onwuegbuzie, 2004).

The strengths of *quantitative research* include the validation of already existing theories, the generalizability of findings as well as the relative independence of the researcher from the results (objectivity of the statistics). Nonetheless, possible weaknesses of *quantitative research* are that the theoretically derived constructs are often too abstract to match "specific local situations, contexts, and individuals" (Johnson & Onwuegbuzie, 2004, p. 19). Compared to *quantitative research*, *qualitative research* allows more in-depth insights, is more "responsive to local situations, conditions and stakeholders' needs" and the interviewee can contribute their personal interpretation of the research phenomenon. However, *qualitative research* does not enable the researcher to generalize results or to make quantitative predictions. *Qualitative research* is moreover quite time-consuming and the results are more susceptible to the influence of personal bias or the idiosyncrasies of the researcher (Johnson & Onwuegbuzie, 2004, p. 20).

According to Johnson and Onwuegbuzie (2004), when applying *mixed methods research*, the researcher has to make two principal choices. The first choice pertains to the paradigm emphasis, *quantitative* versus *qualitative,* whereas the second choice is the time order decision, *concurrent* versus *sequential*. For this thesis, the paradigm emphasis was placed on the *quantitative* analysis, complemented concurrently by a *qualitative* analysis, so that the research strategy could eventually be abbreviated as *QUAN + qual*.

5.3 Research design

In terms of the research design, the researcher may select between five different types, with these types being *experimental design*, *cross-sectional design*, *longitudinal design*, *case study design* and *comparative design*. In this case, a *cross-sectional design* was applied, which is the appropriate choice if the researcher wants to examine more than one observation at a single point of time and collects quantitative and qualitative data simultaneously (Bell et al., 2018). The most frequently used research instrument for *cross-sectional design* is the social survey, which is also the research instrument for this thesis and further described in the following section.

5.3.1 Research instrument

This section provides information with respect to the social survey as a research instrument and touches upon its advantages, disadvantages, applicability and usefulness for the present research phenomenon as well as upon how the social survey was pretested by several experts in order to ascertain its face validity.

5.3.1.1 The social survey

Social surveys are frequently used in the form of self-completion questionnaires that simultaneously permit quantitative and qualitative responses (Bryman & Bell, 2015, p. 675). Social surveys also share similarities with structured interviews and consist of a limited number of questions that are made available online through a website or offline through a standard physical mail.

Online surveys have the additional advantage that the questionnaire can be embellished through software and visualized in a way that adds orientation and structure. The researcher may even experiment with different visual forms that increase the motivation to participate. In addition, online surveys enable the researcher to reach many participants instantly despite geographical distances and to give the participants immediate access to preliminary results (Ilieva et al., 2002). Wright (2005) stated accordingly that the key "advantage of online survey research is that it takes advantage of the ability of the internet to provide access to groups and individuals who would be difficult, if not impossible, to reach through other channels".

For open-ended questions, the quantity and the quality of the responses in online surveys was found to be equally as good or even superior to the quantity and quality of the answers in paper-based questionnaires (Smyth et al., 2009; Couper, 2008). Thus, in this case, larger boxes were used for open questions to encourage responses of even higher detail and quality. Techniques to improve the response rate, such as indicating the time to complete the questionnaire, using a progress indicator and offering to make the results available after the completion of this thesis, were applied for this survey. Since the "most commonly recommended protection against nonresponse bias has been the reduction of nonresponse itself", the invitation to the survey was sent in a personalized email and a reminder was sent after two weeks as a follow-up (Armstrong & Overton, 1977, p. 396). The recipients were also made aware of the possibility to contact the researcher directly in case of any questions or need for clarification.

5.3.1.2 Instrument pretest

By pretesting the survey instrument five times with internal audit/governance scholars and practitioners as well as twice with a methodology counselor, it was ensured that the participants could understand the questions correctly, that the objectives of the survey could be fulfilled and that the questions were consistent with the principles of scientific questionnaire design. In addition, through this kind of cognitive survey pretesting the face validity of the items could be ascertained (Collins, 2003, p. 231). If necessary, minor adjustments to the survey questionnaire were made after the pretesting phase.

5.3.2 Operationalization

This section deals with the operationalization of the survey questionnaire. Specifically, it will be illustrated how the questionnaire items were measured, how the constructs were formed and which variables and control variables were considered.

5.3.2.1 Levels of measurement

As the researcher determines how to operationalize their items, they may select between four levels of measurement in ascending order, namely *nominal variables*, *ordinal variables*, *interval variables* and *ratio variables* (Bernard, 2017).

Nominal variables have to be exhaustive and mutually exclusive, can have more than one value and are often used to collect demographic data such as age, gender or industry affiliation. *Ordinal variables* incorporate the properties of nominal variables but can additionally be rank ordered. Nonetheless, the rank order does not permit to draw conclusions about the relative distance between the ranks. *Interval variables* allow the measurement of distances but still do not have a clearly defined reference point. Ultimately, *ratio variables* have all the properties of *interval variables* and a clear reference point, providing the highest accuracy of measurement. The higher the level of measurement, the more information content can be derived. As a rule of thumb, it is generally recommended to use the highest level of measurement possible. In some instances however, applying lower levels of measurement can be better, for example in social research when no theoretical reference point exists and the distances between *Likert scale* items are not known.

Consequently, for the quantitative survey questions, a combination of *nominal variables* and *ordinal variables* was used. The *nominal variables* were helpful to capture demographic data as well as other descriptive information while the *ordinal variables* served to measure the individual opinions of the survey respondents on a 7-point *Likert scale*.

5.3.2.2 Construct formation

For each set of theoretically related items in the survey questionnaire, a new construct was created. The constructs reflected the single items with equal weights and hence represented their weighted average. Taking the example of a four-item construct, the general logic for the formation of each construct based on its corresponding survey items is shown in the subsequent table.

Table 8: Construct formation

Exemplary four-item construct	Corresponding items and calculation
Name of new construct variable	(Item_1+Item_2+Item_3+Item_4) / 4

The items for each construct were further formulated in line with the previously presented theoretical background. For example, the construct for internal audit performance included items that captured the performance of internal audit in the areas of governance, risk management and internal control as well as with regard to the provision of assurance or consulting services[31]. Similarly, the construct for board performance measured the performance of the board with respect to the *control role* and the *strategic role*[32]. By this means, the theoretical validity of the questionnaire constructs and their items could be increased (Söhnchen, 2007; Krosnick, 1999).

5.3.2.3 Variables of interest

An overview of the variables of interest and their operationalization in the survey questionnaire is presented in the following table.

Table 9: Variables of interest

Variable	Description	Measure
	Variables of interest	
AttB, AttM	Attitude towards communication with the board, senior management	Likert
SNB, SNM	Subjective norm for communication with the board, senior management	Likert
PBCB, PBCM	Perceived behavioral control for communication with the board, senior management	Likert

[31] Also refer to sections 1.1.3 and 3.2.3.1.
[32] Also refer to section 3.2.4.1.

BIB, BIM	Behavioral intention towards communicating effectively with the board, senior management	Likert
Comeff_IAB, Comeff_IAM, Comeff_BIA, Comeff_MIA	Communication effectiveness by internal audit with the board, communication effectiveness by internal audit with senior management, communication effectiveness by the board with internal audit, communication effectiveness by senior management with internal audit	Likert
AffCommitment	Affective commitment of internal auditors	Likert
Perf_IA, Perf_B, Perf_M	Performance of internal audit, the board, senior management	Likert
Goveff	Governance effectiveness	Likert

5.3.2.4 Control variables

To obtain accurate results, it is necessary to isolate the effects of the variables of interest from the effects of other, potentially confounding variables. For this reason, several control variables were taken into consideration. Following the viewpoint that personal characteristics can influence the ability to transfer knowledge effectively (Chen et al., 2012; Cohen & Levinthal, 1990) and that the organizational context affects internal communication according to *systems* and *contingency theory*[33], demographic, structural and cultural control variables were included in the quantitative analysis. In previous research, all three kinds of control variables were associated with employee behavior in general and/or organizational effectiveness at large (Alzeban, 2015; Zheng et al. 2010; Pertusa-Ortega & Zaragoza-Sáez, 2010; Gordon & DiTomaso, 1992; Denison, 1990; Wilkins & Ouchi, 1983; Oldham & Hackham, 1981; Dalton et al. 1980; Child, 1972).

The demographic control variables captured the effects of individual or firm-specific aspects such as age, gender, professional experience or IIA membership. These variables might influence the respondents' communication style, their work-related commitment, the performance of internal audit, the board and senior management as well as the effectiveness of organizational governance.

The structural control variables were operationalized through multiple items for *formalization*, *centralization*, *specialization* and *span of control*[34], whereas the cultural control

[33] Also refer to section 2.1.
[34] Also refer to section 4.5.1.2.

variables comprised items for *collaboration*, *creation*, *control* and *competition*[35]. An additional cultural control variable was included measuring the extent to which the organizational culture supports the mandate of internal audit.

Table 10: Control variables

Control variable	Description	Measure
	Demographic variables a – individual	
Gender	Male or female	Ordinal
Age	Age in years	Ordinal
Profex	Professional experience in years	Ordinal
Certification	Having obtained the CIA or a closely related certifications *yes* or *no*	Dummy
	Demographic variables b – organizational	
IIAMember	Membership in the IIA *yes* or *no*	Dummy
Industry	Industry affiliation	Ordinal
Revenue	Earnings of the last fiscal year in million CHF	Ordinal
Employees	Number of employees in full-time equivalents	Ordinal
IAsize	Number internal auditors in full-time equivalents	Exact[36]
BI	Board independence	Likert
	Structural control variables	
Formal	Agreement concerning formalization of processes	Likert
Central	Agreement concerning centralization of authority	Likert
Special	Agreement concerning specialization of tasks	Likert
SpanContr	Agreement concerning wide span of control	Likert
	Cultural control variables	
Collab	Agreement concerning collaboration focus	Likert
Creation	Agreement concerning creation focus	Likert
Control	Agreement concerning control focus	Likert
Compet	Agreement concerning competition focus	Likert
Supportive_Cult	Agreement concerning the support of the mandate of internal audit	Likert

5.4 Target population

To determine the target population, it is essential to define the unit of analysis, whereby collecting data on the lowest unit of analysis is advisable. In this case, the lowest unit of analysis were internal auditors as individual persons. Higher units of analysis would

[35] Also refer to section 4.5.2.2.
[36] A logarithm of IAsize was used for the quantitative analysis.

have been the entire organization or the IIA as the professional body but it did not seem reasonable to deviate from the lowest unit of analysis in this case.

IIA Standard 2110 – *Governance* strongly suggests the suitability of internal auditors to conduct research in the area internal communication with the board and senior management. As previously mentioned in section 3.2.3.1, this IIA Standard states that it is internal auditors' responsibility to develop recommendations for the improvement of governance processes for "making strategic and operational decisions", "overseeing risk management and control", "promoting appropriate ethics and values within the organization", "ensuring effective organizational performance management and accountability", "communicating risk and control information to appropriate areas of the organization" and "coordinating the activities of, and communicating information among, the board, external and internal auditors, other assurance providers, and management" (IIA, 2017). Consequently, internal auditors do not only perform critical tasks in the areas of governance, risk management and control but they are likewise involved in the coordination of and regular communication with many internal stakeholders, foremost with the board and senior management. Since they provide assurance throughout the entire organization, internal auditors are in an optimal position to evaluate the effectiveness of the board and senior management.

Since IIA Standard 2050 – *Monitoring Progress* clarifies that "the chief audit executive must establish and maintain a system to monitor the disposition of results communicated to management", the CAE and/or their deputy should moreover be able to validate whether the board and senior management have critically reviewed and implemented measures to remediate internal audit findings (IIA, 2017). Due to the dual reporting relationship, internal auditors should be able to evaluate the effectiveness of the downward communication by the board and senior management. Internal auditors' objectivity, which is required by the IIA *Code of Ethics* and IIA Standard 1120 – *Individual Objectivity,* suggests an unbiased attitude reducing the likelihood of social desirability bias in the responses. Consequently, surveying internal auditors was considered the best choice.

By focusing on organizations whose headquarter is located in Switzerland and by addressing members of the same profession, the target population was relatively homogeneous. The survey respondents likewise faced a common regulatory environment, which is important because, according to institutional theory, the institutional context may have

implications for "many aspects of an organization's behavior and structure" (DiMaggio & Powell, 1983, p. 150).

The required sample size to draw conclusions for the target population of 421 internal auditors can be calculated by applying the following formula by Cochran (1977). In the formula, **(1)** Z is the *Z statistic* for the selected significance level, p is the estimated proportion of an attribute that is present in the population, q is 1-p and e is the significance level. Due to careful pre-selection of the target population and using a conservative estimate, at least 90 % ($p = 0.9$) of the target population were presumed to be capable of evaluating the communication process and the communication effectiveness between internal audit and the board and senior management. The significance level was set to the conventional level of five percent, resulting in a Z statistic of 1.96 **(2)**. For smaller finite populations, the preliminary sample size from **(3)** can be adjusted by using a correction formula **(4)**, in which n is the necessary final sample size, n_0 denotes the preliminary (unadjusted) sample size and N is the size of the target population. After filling in the preliminary sample size from **(3)**, the required final sample size was calculated in steps **(5)** and **(6)**:

(1) $$n_0 = \frac{Z^2 pq}{e^2}$$

(2) $$n_0 = \frac{1.96^2 * 0.9 * 0.1}{0.05^2}$$

(3) $$n_0 = 138.2976 \sim 139$$

(4) $$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

(5) $$n = \frac{139}{1 + \frac{(139 - 1)}{421}}$$

(6) $$n = 104.685152 \sim 105$$

Therefore, a final sample size of 105 cases was required to be able to draw conclusions for the target population of 421 internal auditors.

5.5 Sample

In June 2018, the online survey was successfully sent out to 421 internal auditors from organizations headquartered in Switzerland, foremost to Heads of Internal Audit[37], their deputies and internal auditors of high career ranks to ascertain that the recipients have regularly communicated with the board and senior management before. If the recipients qualified as having no or only little prior experience with communication with the board and senior management, they were instructed to either not take part or to forward the survey to other internal auditors in their organization. As a result, most incomplete responses resulted from termination on the first page, presumably after reading the instructions.

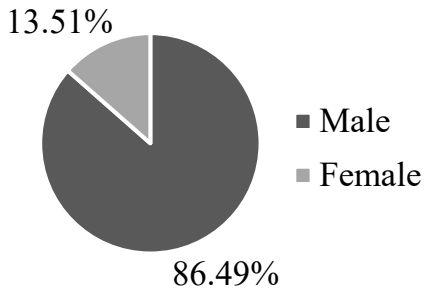
In total 122 responses were counted, which equaled a preliminary response rate of almost 29 %. Nine adjustments had to be made either because a respondent indicated that the headquarter of their organization was not in Switzerland or because there were doubts whether a respondent was an internal auditor or had previously worked in internal audit. The final sample consisted of 113 responses so that the adjusted response rate equaled 26.8 %. The response rate thus lay above the expected range between 10 % and 25 % for social surveys sent to high-ranking professionals. Since both the preliminary and the adjusted sample size were greater than the required sample size of 105 cases, the final sample could be considered as representative for the entire target population.

5.5.1 Gender and age

With 86.49 %, male respondents were approximately six times more frequently represented than female respondents who accounted for 13.51 % of the respondents in the final sample.

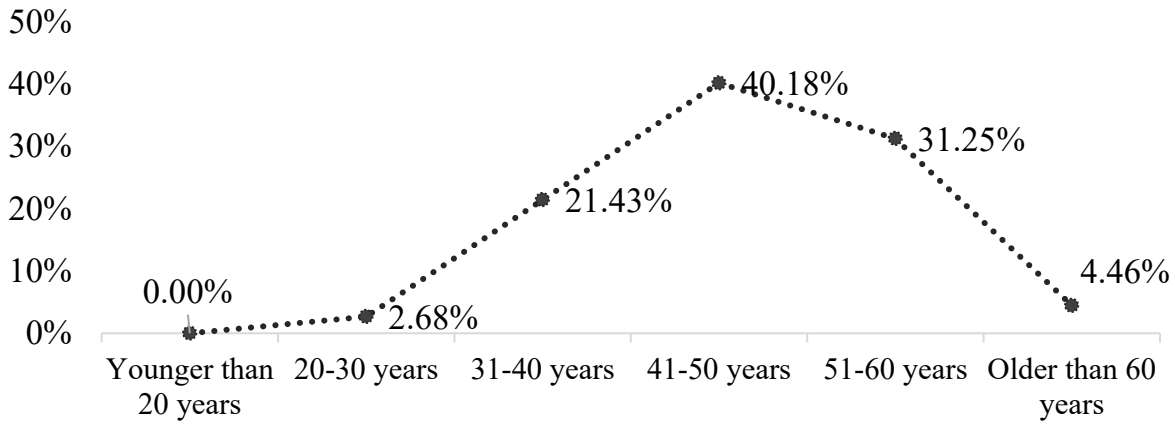
[37] The IIA uses the expression CAE for Chief Audit Executive, however the term Head of Internal Audit is more common in practice.

Figure 7: Gender



As expected, no respondents were younger than 20 years, 2.68 % fell in the category of 20-30 years, approximately one fifth were in the category of 31-40 years, 40.18 % were between 41 and 50 years old, 31.25 % fell in the bracket of 51-60 years and finally 4.46 % of the respondents were older than 60 years. The sample of relatively older respondents was beneficial, as age tends to correspond with the professional experience that is necessary to evaluate the effectiveness of the communication between internal audit and the board and senior management.

Figure 8: Age

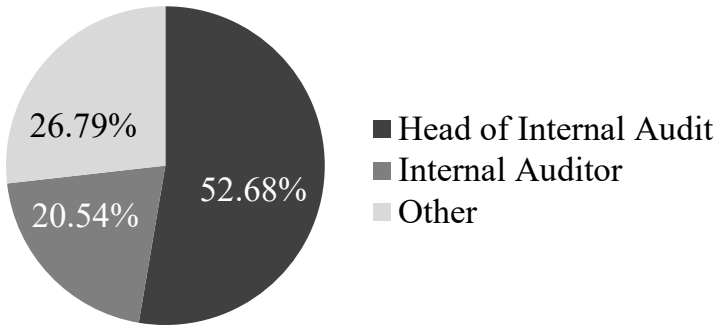


5.5.2 Position

Most respondents in the final sample occupied the position of Head of Internal Audit (52.68 %), followed by staff internal auditors (20.54 %). The category "other", which accounted for 26.79 % of the respondents, comprised for the most part the following positions: Deputy Head of Internal Audit, Internal Audit Team Leader, Audit Director,

Head Group IT Audit and Lead Auditor. The predominant majority of the respondents thus had a high-ranking position in internal audit.

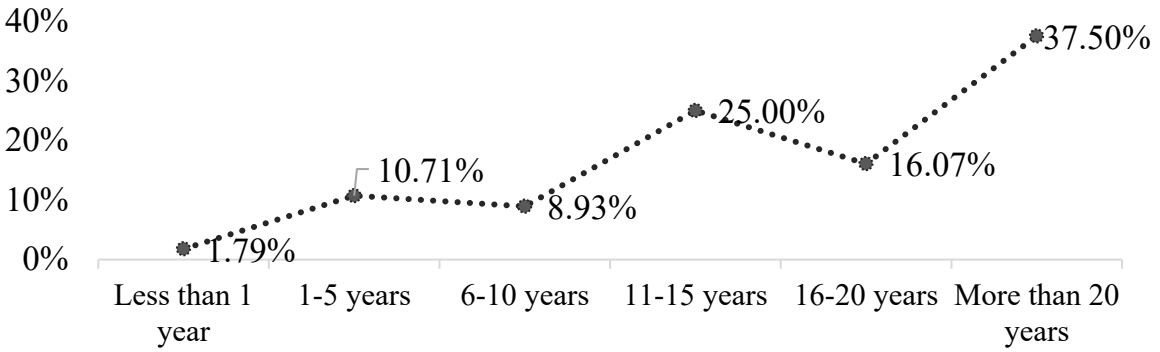
Figure 9: Position



5.5.3 Professional experience

The professional experience of the respondents was overall quite high. Merely 1.79 % indicated to have less than one year of internal auditing experience and 10.71 % had 1-5 years of experience. The most frequently represented bracket in terms of professional experience was the group with more than 20 years of experience, adding up to 37.50 % of the respondents. Analyzing the respondents' professional experience in an aggregate manner, more than 78 % had at least ten years and more than 87.5 % had at least five years of professional experience in internal auditing.

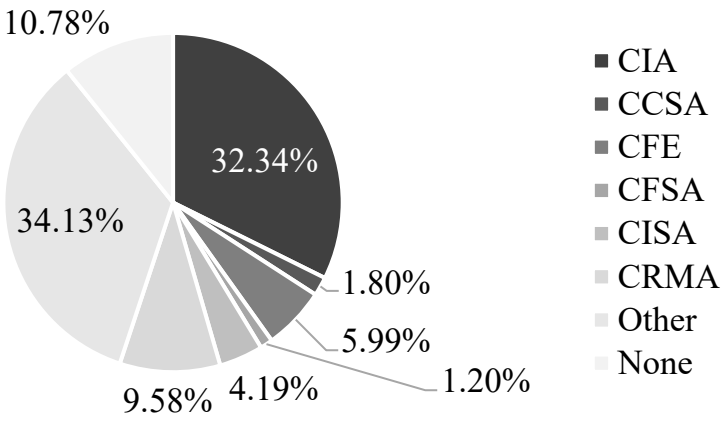
Figure 10: Professional experience



5.5.4 Professional certification

Almost one third of the respondents has passed the CIA®-exam that is globally recognized in the internal audit profession. Moreover, almost ten percent stated that they held the CRMA®-qualification in risk management assurance, 5.99 % have passed the CFE®-examination as certified fraud examiners, 4.19 % were certified information systems auditors (CISA®), 1.80 % have acquired the CCSA® certification in control self-assessment and further 1.20 % were certified financial services auditors (CFSA®). In addition, a considerable proportion of 34.13 % said that they had obtained a certification other than the ones that were explicitly listed in the survey questionnaire. For the most part, the respondents who indicated "other certification" were certified external auditors and held the *Swiss CPA* or *ACCA* qualifications. In addition, qualifications as *internal audit quality assessors* or in *internal audit leadership* (QIAL®) were represented. A few respondents stated to hold master level or PhD degrees in which they specialized in audit, governance or internal control.

Figure 11: Professional certification



5.5.5 IIA membership

A great majority of 81.25 % of the respondents indicated that their organization was an affiliated member of the IIA, respectively of the IIAS or SVIR as the national representation in Switzerland. Therefore, the organizations that were represented in the final

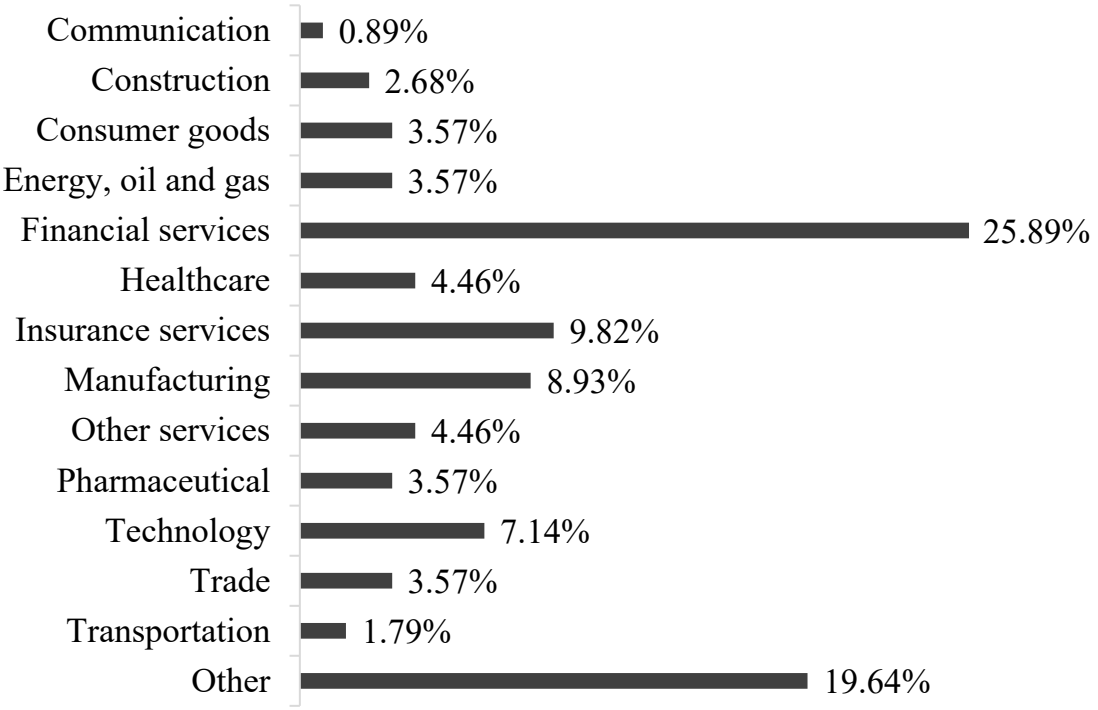
sample could be assumed to be committed to promoting the internal audit profession and to be familiar with the communication requirements illustrated in the IIA Standards.

Figure 12: IIA membership

5.5.6 Industry

The *financial services* sector was the industry that was most often represented in the final sample with a representation of 25.89 %. The high representation of this sector was not surprising because Swiss banks are required to have an internal audit function while it is not mandatory for organizations from other sectors. The same requirement holds for insurances that represented 9.82 % of the final sample. The communication sector constituted 0.89 %, the construction sector 2.68 %, the consumer goods and energy, oil and gas sector respectively 3.57 %, healthcare 4.46 %, manufacturing 8.93 %, other services 4.46 %, the pharmaceutical industry 3.57 %, the technology sector 7.14 %, trade 3.57 % and transportation made up 1.79 % of the final sample. With 19.64 %, almost one fifth of the respondents stated that their organizations belonged to yet another sector. Examining this group of respondents in more detail, the “other industry” bracket included machinery and services, utilities, chemicals or chemistry, facility management, food industry, investment management, energy, real estate, life science, agriculture, retail as well as the public sector. Some of the aforementioned responses were therefore simply specifications of the predefined answer possibilities. Overall, it could be concluded that the sample was quite diverse and included respondents from many different industries.

Figure 13: Industry



5.5.7 Earnings

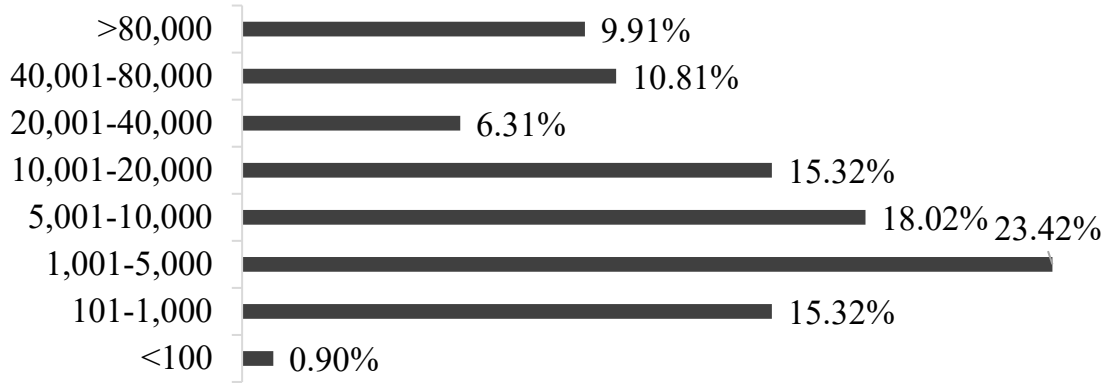
The annual earnings of the organizations that were included in the final sample were relatively equally distributed across the eight predefined earnings categories. The highest share had organizations with earnings higher than 10,000 million CHF (22.12 %), followed by those with earnings between 1,001 and 2,500 million CHF (16.35 %) and between 2,501 and 5,000 million CHF (14.42 %). Only organizations with less than 50 million CHF, 51-250 million CHF and 251-500 million CHF annual earnings constituted less than ten percent of the final sample, respectively. The final sample therefore predominantly comprised organizations with higher earnings, which most likely also correlated with higher business complexity and a more sophisticated governance, risk management and internal control system.

Figure 14: Earnings

5.5.8 Employees

In terms of the number of employees, most respondents indicated that their organizations had 1,001-5,000 employees (23.42 %), followed by 5,001-10,000 employees (18.02 %), 101-1,000 employees and 10,001-20’000 employees (each 15.32 %).

Figure 15: Employees



5.5.9 Internal audit size

The descriptive statistics for the internal audit sizes that were represented in the final sample are provided in the following table. It could be seen that although the represented

organizations employed about 38 full-time internal auditors on average, the range between the smallest and the largest internal audit function (or activity) was considerable.

Table 11: Internal audit size

Descriptive statistics	
N	110
Range	499
Minimum	1
Maximum	500
Mean	37.63
SD	92.43

5.5.10 Board independence

The items for the board independence construct were formulated according to the recommendations of the Swiss Code that were previously illustrated[38]. Although the board in the final sample was rather independent, the mean of 4.37, measured on a 7-point Likert scale with "7" signifying absolute independence, was not outstandingly high.

Table 12: Board independence

Descriptive statistics	
N	108
Range	6
Minimum	1
Maximum	7
Mean	4.38
SD	2.08

5.6 Data preparation

The subsequent sections are concerned with describing the data preparation for the quantitative and qualitative analyses, thereby also touching upon missing values as well as the requirements for the validity and reliability of the data.

[38] Also refer to section 3.1.2.

5.6.1 Missing values

The below table illustrates the number of observations for each construct for the variables of interest as well as the construct's the mean, standard deviation and the number of missing values. It could be seen that the number of missing values was mostly quite small. Slightly higher percentages of missing values were prevalent for the constructs relating to the board, which was understandable because not all respondents had a direct reporting line to the board of directors.

Table 13: Missing values

Variable	N	Mean	SD	Missing	
				Count	%
AttB	109	6.57	0.59	4	3.5
AttM	112	6.38	0.63	1	0.9
SNB	108	5.68	1.23	5	4.4
SNM	112	5.98	0.97	1	0.9
PBCB	109	5.60	1.26	4	3.5
PBCM	112	5.72	1.00	1	0.9
BIB	109	6.32	0.92	4	3.5
BIM	112	6.29	0.82	1	0.9
Comeff_IAB	109	5.58	1.21	4	3.5
Comeff_IAM	111	5.54	1.19	2	1.8
Comeff_BIA	108	5.43	1.22	5	4.4
Comeff_MIA	111	5.42	1.16	2	1.8
AffCommitment	111	6.15	0.71	2	1.77
Perf_IA	111	5.66	0.91	2	1.8
Perf_B	106	5.35	1.20	7	6.2
Perf_M	109	5.21	1.19	4	3.5
Goveff	106	5.57	1.11	7	6.2

How researchers treat missing data depends on the reason why these data are missing. In general, there are three kinds of missing data, namely:

1. *MCAR* ("missing completely at random");
2. *MAR* ("missing at random");
3. *MNAR* ("missing not at random").

When the data are missing completely at random *(MCAR*), the reason for the missing data cannot be determined based on the properties of other variables. In this case, the fact that the data are missing has no influence on the statistical properties of the non-

missing data and the non-missing data can be considered a fully random subsample of the original dataset. For data that are missing at random (*MAR*), the reason for the missing data is linked to the properties of other variables so that there is a systematic relationship between the data that are missing and the data that are not missing. Lastly, when data are missing not at random (*MNAR*), the reason for the missing data does not only depend on certain attributes of other variables but also on the unique properties of the missing variable itself (Urban & Mayerl, 2018). *MNAR* data can represent a threat to the validity of the statistical analysis because listwise deletion might lead to bias in the coefficients.

The *Little's Test*, also known as *Little's MCAR Test*, compares the means of cases with missing values – the treatment group – with the means of the control group without missing values (Urban & Mayerl, 2018, p. 449). A non-significant *Little's Test* with a *p*-value greater than 0.05 implies that the risk of erroneously accepting the alternative hypothesis is too high and that the null hypothesis, presuming that the data are *MCAR*, should be maintained. The test cannot be applied with binary ("dummy") variables so that these variables had to be excluded. The *Little's Test* consequently yielded the following results:

Table 14: Little's Test

Little's Test results	
Chi-Square	3529.650
Df	3436
Sig.	0.130

Since the result of the *Litte's Test* was non-significant, the missing data were deleted listwise, which is also the most common way of dealing with missing data in the social sciences (Urban & Mayerl, 2018, p. 454).

5.6.2 Quantitative construct validity

Validity in quantitative research is determined through "whether the research truly measures that which it was intended to measure or how truthful the research results are" (Golafshani, 2003, p. 599). Put differently, quantitative validity reflects "whether or not

an indicator […] that is devised to gauge a concept really measures that concept" (Bryman & Bell, 2015, p. 170). The most relevant forms of construct validity are face validity, which was ascertained through multiple instrument pretests, *convergent validity* and *discriminant validity*. *Convergent validity* measures the correlation between the items of the same construct to show that two items that should theoretically be related are also in fact related. High correlations would hence confirm that the items should belong in the same construct. Conversely, *discriminant validity* indicates whether measures that should theoretically not be related are also in fact unrelated. Essentially, *convergent validity* and *discriminant validity* can be interpreted as the two faces of the same coin.

In this case, the construct validity was analyzed through principal component analysis (PCA), using the software *IBM SPSS Version 25*. The primary purpose of the PCA "is to define the underlying structure among the variables" through correlations (Hair et al., 2006, p. 104). PCA is moreover useful to reduce the information density by generating composite dimensions or factors (Joliffe, 2011). A factor is basically the common dimension of variables that are highly correlated. In order to be able to perform PCA, the data must have sufficient correlations, which is tested with the *Kaiser-Meyer-Olkin-Measure* (KMO) of sampling adequacy as well as with *Bartlett's Test of Sphericity*. The *Kaiser-Meyer-Olkin-Measure* of sampling adequacy can assume values between zero and one, whereby a value of one is obtained if there is a perfect correlation between the variables.

To ensure that the constructs are analyzed together that were also theoretically linked with each other, the PCA was performed three times for three different groups of related constructs (I-III). The constructs pertaining to the antecedents of effective communication with the board (I) were analyzed together, the constructs pertaining to the antecedents of effective communication with senior management (II) were analyzed together and the constructs pertaining to the outcomes of effective communication were analyzed together (III).

5.6.2.1 Antecedents for effective communication with the board (I)

Both the *Kaiser-Meyer-Olkin-Measure* of sampling adequacy and the *Bartlett's Test of Sphericity* showed that the underlying data were fit for conducting PCA. The *Kaiser-*

Meyer-Olkin-Measure was significantly above the recommended 0.6 threshold and the *Bartlett's Test of Sphericity* was significant at the 0.001-level.

Table 15: KMO and Bartlett's Test I

KMO		0.898 > 0.6
Bartlett's Test of Sphericity	Chi-Square	1817.981
	Df	210
	Sig.	0.000 < 0.05

Only considering eigenvalues greater than one as recommended by Hair et al. (2006, p. 120), four main components were extracted that cumulatively explained 74.91 % of the variance. No component explained more than 50 % of the variance so that single source bias could be excluded (Podsakoff et al., 2003). The same result was found for the subsequent analyses for the antecedents and outcomes of effective communication.

The factor loadings were rotated through *Oblimin Rotation with Kaiser Normalization* as an oblique instead of an orthogonal rotation method that is used when the components are allowed to correlate. In this case, especially the components 1 and 4 correlated moderately with a 0.492 correlation coefficient. To fulfill the requirements of *convergent* and *discriminant validity*, a cut-off for the factor loadings of 0.4 was selected and cross-loadings were accepted for theoretically unidimensional constructs if the cross-loadings were at least 0.2 lower than the factor loadings for the main component (Hair et al., 2006). Items with higher cross-loadings were deleted unless the cross-loadings were theoretically justifiable.

The component pattern matrix suggested that five items needed to be eliminated due not meeting the thresholds for *convergent* and *discriminant validity*, namely AttB_1, AttB_4, SNB_1, SNB_3 and BIB_1. Besides, it could be concluded that the same underlying and unobservable factor influenced the constructs for perceived behavioral control for communication with the board (PBCB) and for communication effectiveness by internal audit with the board (Comeff_IAB) because they loaded most significantly on the same component. Therefore, it could already be presumed that the relationship of these two constructs would also be significant in the subsequent regression analysis. All items had communalities above 0.5, indicating sufficient explanatory power (Hair et al., 2006, p. 131).

Table 16: Component pattern matrix I

Item		Components				
	*	1	2	3	4	Extraction
AttB_1	*X*	0.727	-0.098	0.277	0.146	0.804
AttB_2		-0.209	0.003	**0.874**	0.051	0.723
AttB_3		0.122	0.159	**0.810**	-0.128	0.772
AttB_4	*X*	0.524	-0.030	0.494	0.014	0.652
SNB_1	*X*	0.434	-0.017	0.094	0.553	0.776
SNB_2		0.300	0.014	0.136	**0.626**	0.756
SNB_3	*X*	0.448	-0.032	0.057	0.548	0.758
SNB_4		-0.109	0.099	-0.096	**0.905**	0.751
PBCB_1		**0.524**	0.156	0.088	0.296	0.663
PBCB_2		**0.806**	-0.032	0.047	0.091	0.739
PBCB_3		**0.762**	0.022	0.089	0.141	0.771
PBCB_4		**0.891**	0.107	-0.034	-0.184	0.712
PBCB_5		**0.860**	0.029	-0.134	-0.019	0.694
BIB_1	*X*	0.110	0.427	0.251	0.284	0.562
BIB_2		-0.027	**0.920**	0.007	0.049	0.859
BIB_3		0.012	**0.953**	-0.073	-0.034	0.869
BIB_4		0.017	**0.846**	0.074	-0.022	0.753
Comeff_IAB_1		**0.924**	0.020	-0.036	-0.030	0.824
Comeff_IAB_2		**0.843**	-0.001	-0.062	0.078	0.755
Comeff_IAB_3		**0.853**	0.022	0.049	-0.029	0.740
Comeff_IAB_4		**0.839**	0.051	-0.110	0.116	0.798

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
**X* = Eliminated.

5.6.2.2 Antecedents for effective communication with senior management (II)

For the second group of constructs the requirements regarding the *Kaiser-Meyer-Olkin Measure* of sampling adequacy and the *Bartlett's Test of Sphericity* were also fulfilled, as can be seen in the table below.

Table 17: KMO and Bartlett's Test II

KMO		0.871 > 0.6
Bartlett's Test of Sphericity	Chi-Square	1773.712
	Df	210
	Sig.	0.000 < 0.05

In this case, five components could be extracted with initial eigenvalues greater than one, which cumulatively explained 77.01 % of the variance. The component pattern

matrix showed that, this time, each construct loaded most strongly on a different component. The items AttM_1 and PBCM_1 were eliminated from the subsequent analyses because the cross-loadings with other components were too high.

Table 18: Component pattern matrix II

Item		Components					
	*	1	2	3	4	5	Extraction
AttM_1	*X*	0.475	0.443	-0.174	-0.100	0.250	0.770
AttM_2		-0.231	**0.791**	0.200	-0.014	-0.070	0.666
AttM_3		0.047	**0.732**	-0.074	-0.202	-0.016	0.670
AttM_4		0.280	**0.804**	-0.068	0.071	0.059	0.794
SNM_1		0.191	0.264	0.049	**-0.680**	0.018	0.838
SNM_2		0.071	0.305	0.106	**-0.659**	0.011	0.781
SNM_3		-0.006	0.182	0.036	**-0.702**	0.203	0.776
SNM_4		-0.080	-0.158	-0.001	**-0.887**	0.010	0.687
PBCM_1	*X*	0.224	0.090	0.185	-0.406	0.243	0.620
PBCM_2		-0.037	0.035	0.013	-0.203	**0.777**	0.729
PBCM_3		0.118	-0.031	0.069	-0.198	**0.710**	0.763
PBCM_4		0.049	-0.073	-0.033	0.074	**0.904**	0.797
PBCM_5		0.173	0.013	0.028	0.047	**0.760**	0.737
BIM_1		0.222	-0.133	**0.782**	-0.166	-0.145	0.769
BIM_2		0.112	-0.001	**0.892**	-0.063	-0.086	0.864
BIM_3		0.089	0.058	**0.849**	-0.028	-0.013	0.801
BIM_4		-0.154	0.107	**0.749**	0.111	0.320	0.660
Comeff_IAM_1		**0.802**	-0.034	0.064	0.059	0.175	0.810
Comeff_IAM_2		**0.871**	0.035	-0.007	-0.038	0.088	0.884
Comeff_IAM_3		**0.867**	-0.022	0.130	-0.017	0.042	0.869
Comeff_IAM_4		**0.895**	0.013	0.120	-0.023	-0.006	0.886

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
*X = Eliminated.

The highest intercorrelation between the five extracted components was identified between component 1 and component 5, which had a correlation coefficient of 0.524.

5.6.2.3 Outcomes of effective communication (III)

Like for the previous two groups of constructs, also for the last group the requirements for conducting PCA were fulfilled. The table below shows the corresponding results for the *Kaiser-Meyer-Olkin Measure* of sampling adequacy and the *Bartlett's Test of Sphericity*.

Table 19: KMO and Bartlett's Test III

KMO		0.849 > 0.6
Bartlett's Test of Sphericity	Chi-Square	4024.435
	Df	861
	Sig.	0.000 < 0.05

Overall, eight components with initial eigenvalues greater than one were extracted, cumulatively explaining 83.19 % of the variance. The component pattern matrix uncovered that the construct for affective commitment consisted of three different dimensions because the components 2, 4 and 6 had factor loadings greater than 0.4. Therefore, three separate subconstructs for affective commitment were created for the subsequent analyses. The first item of the affective commitment construct was moreover eliminated due to too high cross-loadings.

In addition, the component pattern matrix indicated that the performance of senior management had only marginally higher factor loadings for the seventh component than for the first and the eight component, suggesting that senior management performance is on the verge of being a multidimensional construct. Besides, the constructs for communication effectiveness by internal audit with the board (Comeff_IAB) and communication effectiveness by the board with internal audit (Comeff_BIA) loaded mainly on the same factor. A similar pattern could be observed for the constructs relating to the communication effectiveness by internal audit with senior management (Comeff_MIA) and by senior management with internal audit (Comeff_IAM). Theoretically, this pattern supported the understanding of Burke and Wilcox (1969) who emphasized that communication is a bilateral process to which both parties contribute and for which the influence of the superior is usually higher than the influence of the subordinate.

Since governance effectiveness is a multidimensional construct in theory, it was not surprising that the construct for governance effectiveness loaded strongly on different components. However, the cross-loadings were much more profound than for senior management performance. As a result, *convergent* and *discriminant validity* could not be affirmed anymore for the construct governance effectiveness, as anticipated. Since unidimensional constructs are preferred over multidimensional constructs from a methodological point of view, only two items remained in the construct (Johnson et al., 2011, p. 758; Edwards, 2001, p. 45; Gerbing & Anderson, 1988).

The highest intercorrelations were between components 1 and 4 (0.542), 1 and 8 (0.530) and 4 and 8 (0.525), suggesting that the latent factors underlying the communication effectiveness between internal audit and the board, between internal audit and senior management and between board performance and senior management performance were moderately correlated with each other.

Table 20: Component pattern matrix III

Items		Components								
	*	1	2	3	4	5	6	7	8	Extr.
Comeff_IAB_1		0.262	0.037	0.036	**0.667**	0.046	-0.006	-0.162	0.105	0.823
Comeff_IAB_2		0.106	0.079	0.224	**0.568**	0.017	-0.034	-0.302	0.252	0.809
Comeff_IAB_3		0.224	0.121	-0.016	**0.642**	-0.013	-0.206	-0.126	0.068	0.830
Comeff_IAB_4		0.148	0.140	0.045	**0.712**	-0.001	0.019	-0.172	0.123	0.865
Comeff_IAM_1		**0.664**	0.190	-0.053	0.286	0.095	-0.001	-0.229	-0.023	0.819
Comeff_IAM_2		**0.804**	0.152	0.153	0.075	-0.050	-0.005	-0.119	-0.029	0.866
Comeff_IAM_3		**0.821**	0.200	0.022	0.126	-0.051	-0.048	0.028	-0.149	0.901
Comeff_IAM_4		**0.742**	0.212	0.081	0.184	-0.060	0.113	-0.094	-0.022	0.885
Comeff_BIA_1		0.099	-0.075	-0.013	**0.854**	0.098	0.098	0.010	0.030	0.811
Comeff_BIA_2		0.007	0.015	0.060	**0.847**	-0.072	-0.007	0.069	0.031	0.822
Comeff_BIA_3		-0.041	0.072	-0.052	**0.792**	-0.059	0.012	0.158	0.136	0.834
Comeff_BIA_4		-0.103	0.110	0.013	**0.842**	0.060	0.012	0.143	0.084	0.862
Comeff_MIA_1		**0.780**	-0.057	0.053	0.024	-0.053	0.065	0.121	0.131	0.824
Comeff_MIA_2		**0.787**	-0.086	0.074	-0.081	-0.004	-0.113	0.121	0.181	0.848
Comeff_MIA_3		**0.702**	-0.073	-0.046	0.032	0.070	-0.113	0.139	0.244	0.838
Comeff_MIA_4		**0.648**	-0.033	0.044	0.185	0.095	0.061	0.193	0.158	0.890
AffCommit._1	*X*	0.006	0.048	0.641	-0.084	0.559	0.259	0.080	0.044	0.868
AffCommit._2		0.144	0.005	**0.859**	-0.159	0.162	0.048	-0.024	0.115	0.895
AffCommit._3		-0.069	-0.030	**0.783**	0.129	-0.148	-0.329	-0.045	0.132	0.865
AffCommit._4		0.047	-0.074	**0.862**	0.152	-0.122	-0.144	0.050	-0.090	0.852
AffCommit._5		-0.038	0.019	-0.061	0.070	**0.950**	-0.056	0.054	-0.053	0.905
AffCommit._6		0.012	0.054	0.030	-0.009	**0.688**	-0.439	-0.167	0.075	0.814
AffCommit._7		-0.004	0.118	0.137	-0.086	0.176	**-0.818**	-0.165	0.164	0.899
AffCommit._8		0.028	0.069	0.149	0.040	0.078	**-0.796**	0.206	-0.278	0.812
Perf_IA_Gov		0.259	**0.632**	0.023	0.059	-0.102	-0.135	0.102	-0.081	0.696
Perf_IA_RM		0.027	**0.699**	0.092	0.168	0.156	0.223	0.150	-0.040	0.699
Perf_IA_IC		-0.065	**0.909**	0.055	0.034	-0.127	0.070	0.000	0.028	0.777
Perf_IA_Ass		-0.107	**0.834**	0.003	0.010	0.145	-0.107	0.041	-0.016	0.747
Perf_IA_Cons		0.142	**0.761**	-0.125	-0.094	-0.039	-0.129	-0.241	0.109	0.754
Perf_IA_Total		0.084	**0.858**	-0.152	0.012	0.083	-0.083	0.008	0.068	0.909
Perf_B_Strat		0.072	0.087	-0.018	0.149	-0.051	-0.085	0.084	**0.670**	0.740
Perf_B_Contr		0.045	0.160	-0.010	0.116	-0.019	-0.056	0.297	**0.646**	0.848
Perf_B_Total		0.020	0.123	-0.062	0.228	-0.035	-0.080	0.067	**0.731**	0.875
Perf_M_Lead		0.400	0.073	0.105	-0.099	-0.123	-0.146	**0.477**	0.293	0.856
Perf_M_Monit		0.293	0.019	0.123	0.063	-0.038	0.071	**0.452**	0.379	0.861
Perf_M_Total		0.377	0.106	0.115	-0.028	-0.048	-0.010	**0.450**	0.363	0.912
Goveff_1	*X*	0.089	0.075	0.149	0.381	-0.003	0.035	0.502	0.061	0.713
Goveff_2		0.100	-0.040	0.131	0.041	0.035	0.096	-0.052	**0.792**	0.809
Goveff_3		-0.029	-0.039	0.097	0.120	0.044	0.115	-0.080	**0.817**	0.777
Goveff_4	*X*	0.242	-0.010	0.081	0.407	0.037	-0.258	0.330	0.121	0.820
Goveff_5	*X*	0.322	-0.021	-0.009	0.225	0.025	-0.100	0.471	0.219	0.829
Goveff_6	*X*	0.402	0.008	-0.030	0.182	0.153	-0.085	0.357	0.299	0.883

Note: Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
*X = Eliminated.

5.6.3 Quantitative construct reliability

Reliability in quantitative research is concerned with the consistency of measures so that "if the results of a study may be reproduced under a similar methodology, then the research instrument is considered reliable" (Golafshani, 2003, p. 598; Joppe, 2000, p. 1). In other words, reliable measures would let the researcher come to the same conclusion in a second or third analysis.

Quantitative reliability may additionally refer to the internal consistency of the constructs, which is achieved when the construct's items sufficiently correlate with each other in the same direction. A common measure of internal consistency reliability is *Cronbach's alpha,* which calculates the average of all possible split-half reliability coefficients (Bryman & Bell, 2015, p. 169). The logic behind the split-half reliability coefficients is that when the items of a construct are split in half and the two groups have a high correlation for every combination, the split-half reliability coefficient is high. Since *Cronbach's alpha* relies on correlation coefficients, it yields values between zero and one. For constructs with at least four items, a *Cronbach's alpha* of 0.7 or higher is considered good although *Cronbach's alpha* can be lower for constructs with fewer items (Abdelmoula et al., 2015; Weiber & Mühlhaus, 2014, p. 137; Iacobucci & Duhachek, 2003; Nunnally, 1978, p. 245). In this case, the *Cronbach's alphas* were all in the extremely high range of 0.8-0.9, except for the two-item constructs AttB, AttM and SNB.

Table 21: Construct reliability

Construct	Item		Eliminated	Inter-item correlation	Cronbach's Alpha	If deleted
AttB	AttB_1	I associate *positive experiences* with communication with the board.	yes		**0.617**	n.a.
	AttB_2	I think that effective communication with the board is *desirable*.	no	0.505		n.a.
	AttB_3	I *appreciate* effective communication with the board.	no	0.505		n.a.
	AttB_4	We have a *positive opinion* towards communicating with the board.	yes			n.a.
AttM	AttM_1	I associate *positive experiences* with communication with senior management.	yes		**0.745**	0.724
	AttM_2	I think that effective communication with senior management is *desirable*.	no	0.464		0.607
	AttM_3	I *appreciate* effective communication with senior management.	no	0.464		0.633
	AttM_4	I have a *positive opinion* towards communicating with the board.	yes			n.a.
SNB	SNB_1	*Organizational culture* in my organization requires effective communication with the board.	yes		**0.695**	n.a.
	SNB_2	The *social norms* in my organization require effective communication with the board.	no	0.532		n.a.
	SNB_3	Communicating effectively with the board is *considered necessary* in my organization.	yes			n.a.
	SNB_4	*Other persons* in my organization put high value on effective communication with the board.	no	0.532		n.a.
SNM	SNM_1	*Organizational culture* in my organization requires communication with senior management.	no		**0.884**	0.813
	SNM_2	The *social norms* in my organization require effective communication with senior management.	no	0.797		0.832
	SNM_3	Communicating effectively with senior management is *considered necessary* in my organization.	no	0.836		0.818
	SNM_4	*Other persons* in my organization put high value on effective communication with senior management.	no	0.538		0.923

PBCB	PBCB_1	We are *confident* to communicate with the board.	no	0.701	**0.915**	0.916
	PBCB_2	It is *easy* for us to communicate with the board.	no	0.840		0.884
	PBCB_3	The board is *accessible* for communication with the internal audit activity.	no	0.854		0.881
	PBCB_4	The internal audit activity has a *high degree of control* over how they communicate with the board.	no	0.796		0.898
	PBCB_5	The internal audit activity has a *high degree of control* over the outcome of their communication with the board.	no	0.780		0.896
PBCM	PBCM_1	We are *confident* to communicate with senior management.	yes			
	PBCM_2	It is *easy* for us to communicate with senior management.	no	0.691		0.855
	PBCM_3	The board is *accessible* for communication with senior management.	no	0.758		0.834
	PBCM_4	The internal audit activity has a *high degree of control* over how they communicate with senior management.	no	0.755	**0.874**	0.829
	PBCM_5	The internal audit activity has a *high degree of control* over the outcome of their communication with senior management.	no	0.761		0.836
BIB	BIB_1	We are *determined* to communicate effectively with the board.	yes			
	BIB_2	It is our *objective* to communicate effectively with the board.	no	0.826	**0.887**	0.825
	BIB_3	We *always attempt* to communicate effectively with the board.	no	0.830		0.801
	BIB_4	We *do anything we can* to communicate effectively with the board.	no	0.750		0.909
BIM	BIM_1	I am *determined* to communicate effectively with senior management.	no	0.545	**0.858**	0.878
	BIM_2	It is my *objective* to communicate effectively with senior management.	no	0.842		0.769
	BIM_3	I *always attempt* to communicate effectively with senior management.	no	0.823		0.770
	BIM_4	I *do anything I can* to communicate effectively with senior management.	no	0.674		0.852

Comeff_IAB	Comeff_IAB_1	I am *satisfied* with the way the internal audit activity communicates with the board.	no	0.885	**0.954**	0.942
	Comeff_IAB_2	The communication by the internal audit activity to the board usually *fulfills its objective*.	no	0.894		0.938
	Comeff_IAB_3	The communication by the internal audit activity to the board is usually helpful in producing *desired outcomes*.	no	0.871		0.944
	Comeff_IAB_4	I *perceive* the communication by the internal audit activity to the board to be effective.	no	0.908		0.933
Comeff_IAM	Comeff_IAM_1	I am *satisfied* with the way the internal audit activity communicates with senior management.	no	0.838	**0.955**	0.957
	Comeff_IAM_2	The communication by the internal audit activity to senior management usually *fulfills its objective*.	no	0.913		0.933
	Comeff_IAM_3	The communication by the internal audit activity to senior management is usually helpful in producing *desired outcomes*.	no	0.895		0.938
	Comeff_IAM_4	I *perceive* the communication by the internal audit activity to senior management to be effective.	no	0.915		0.933
Comeff_BIA	Comeff_BIA_1	I am *satisfied* with the way the board communicates with the internal audit activity.	no	0.819	**0.943**	0.941
	Comeff_BIA_2	The communication by the board usually *fulfills its objective*.	no	0.884		0.926
	Comeff_BIA_3	The communication by the board is usually helpful in producing *desired outcomes*.	no	0.883		0.919
	Comeff_BIA_4	I *perceive* the communication by the board to be effective.	no	0.901		0.914
Comeff_MIA	Comeff_MIA_1	I am *satisfied* with the way senior management communicates with the internal audit activity.	no	0.872	**0.954**	0.944
	Comeff_MIA_2	The communication by senior management usually *fulfills its objective*.	no	0.907		0.936
	Comeff_MIA_3	The communication by senior management is usually helpful in producing *desired outcomes*.	no	0.905		0.935
	Comeff_MIA_4	I *perceive* the communication by senior management to be effective.	no	0.884		0.944
AffCommitment1	AffCommitment1	I am *emotionally attached* to my organization.	yes		**0.846**	
	AffCommitment2	I *identify* myself with my organization.	no	0.799		0.751

	AffCommit-ment3	I am *engaged in* my organization.	no	0.782		0.721
	AffCommit-ment4	I am *committed* to my organization.	no	0.686		0.851
AffCommit-ment2	AffCommit-ment5	I am *emotionally attached* to my work.	no	0.720	**0.837**	n.a.
	AffCommit-ment6	I *identify* myself with my work.	no	0.720		n.a.
AffCommit-ment3	AffCommit-ment7	I am *engaged in* my work.	no	0.726	**0.841**	n.a.
	AffCommit-ment8	I am *committed* to my work.	no	0.726		n.a.
Perf_IA	Perf_IA_Gov	*Governance*-related tasks	no	0.648	**0.874**	0.859
	Perf_IA_RM	*Risk management*-related tasks	no	0.671		0.855
	Perf_IA_IC	*Control*-related tasks	no	0.741		0.846
	Perf_IA_Ass	*Assurance*-related performance	no	0.667		0.855
	Perf_IA_Cons	*Consulting*-related performance	no	0.582		0.876
	Perf_IA_Total	*Overall* performance	no	0.864		0.828
Perf_B	Perf_B_Strat	*Strategy*-related tasks	no	0.741	**0.904**	0.918
	Perf_B_Contr	*Control*-related tasks	no	0.809		0.863
	Perf_B_Total	*Overall* performance	no	0.883		0.802
Perf_M	Perf_M_Lead	*Leadership*-related tasks	no	0.796	**0.908**	0.888
	Perf_M_Monit	*Monitoring*-related tasks	no	0.782		0.902
	Perf_M_Total	*Overall* performance	no	0.893		0.820
Goveff	Goveff_1	My organization fulfills its *sustainable company interests*.	yes		**0.902**	n.a.
	Goveff_2	*Decision-making capability* of the board is given.	no	0.822		n.a.
	Goveff_3	*Efficiency* of the board is given.	no	0.822		n.a.
	Goveff_4	*Transparency* is given.	yes			n.a.
	Goveff_5	Healthy *balance* of management and control is given.	yes			n.a.
	Goveff_6	I *perceive* corporate governance in my organization to be *effective*.	yes			n.a.

5.6.4 Qualitative validity and reliability

Since also a qualitative analysis was performed, it is important to additionally clarify what validity and reliability signify for qualitative data. Q*ualitative validity* means that the researcher applies procedures to ensure the accuracy of their implications while *qualitative reliability* requires that the research results are replicable by other researchers (Creswell, 2014, p. 201).

Qualitative validity strategies include the triangulation of data sources, the clarification of potential researcher bias as well as the conscious presentation of discrepant or counterintuitive information (Creswell, 2014, p. 202). In this case, the researcher chose to present all information including potentially discrepant implications. The qualitative data were moreover continuously compared with extant literature to identify similarities and differences. By contrast, *qualitative reliability* can be improved through eliminating obvious mistakes in the data transcripts, through eliminating inconsistencies in the coding process and through cross-validating codes that were developed by different researchers (Gibbs, 2018). Here, the coding process was repeated multiple times to detect inconsistencies and was only finished after all codes were confirmed twice.

Since *qualitative validity* and *reliability* are more difficult to ascertain compared to *quantitative validity* and *reliability*, alternative evaluation criteria were proposed to increase the trustworthiness of qualitative findings, including *dependability*, *transferability*, *credibility* and *conformability* (Eriksson & Kovalainen, 2015, p. 308). In the following, it will be briefly described what each criterion means and how each criterion was ensured for the present analysis.

Firstly*, dependability* requires the researcher to deal with the data in a way that the implications are logical, traceable and well-documented. To increase the *dependability* in the qualitative analysis, a separate spreadsheet was used for each coding phase to trace and revise the coding process if necessary. Secondly, *transferability* refers to establishing logical connections with existing research, whereby similarities and differences should be emphasized. Since the data were compared to extant literature on an ongoing basis, the qualitative implications could be logically connected to the current state of knowledge. Thirdly, the criterion of *credibility* demands that the researcher is an expert in their field who is able to identify conceptual associations in the data. Due to an extensive literature review, the researcher gained sufficient knowledge in their field of

study prior to conducting their research. Finally, *conformability* suggests that others easily understand the conclusions drawn by the researcher. In this case, through summarizing, contextualizing and discussing the qualitative results as well as establishing relevant links with prior research, the *conformability* of the qualitative findings could be increased. (Eriksson & Kovalainen, 2015)

5.7 Data analysis

After explaining how the data were prepared for the statistical analysis and how validity and reliability were ensured, the following sections convey the three methodologies that were applied for the quantitative and qualitative analyses, namely hierarchical multiple regression analysis, path analysis and qualitative content analysis. Together, these three methodologies served to accommodate to the *intermediate* state of theory and research of the research phenomenon and to mitigate each other's strengths and weaknesses through triangulation.

5.7.1 Regression analysis

Unlike simple regression, multiple regression does not consider only one but two or more independent variables, which are added to the regression procedure in a sequential manner, thereby producing a "hierarchy" of regression models (Hair et al., 2006).

Linear ordinary least squares regression can be performed when the assumptions of a linear relationship, multivariate normality, no or little multicollinearity, no autocorrelation of the residuals and homoscedasticity of variance are fulfilled. As theoretically anticipated, the assumption of a linear relationship between the independent and the respective dependent variables could be confirmed visually and statistically in the statistics software *IBM SPSS Version 25*. In addition, the *Durbin-Watson* statistic, which indicates the autocorrelation of the residuals, consistently remained in the acceptable range between 1.5 and 2.5 and the *Variance Inflation Factors* (VIF) were steadily below the generally recommended threshold of 10, indicating no serious issue of multicollinearity.

Nonetheless, since *Likert* data tend to deviate from being normally distributed, the assumption of homoscedasticity of variance had to be accepted with caution. To account

for possible bias and to enhance the robustness of the statistical inference, the bootstrapping technique was employed. Bootstrapping is a methodology that is closely related to *Monte Carlo simulation.* It is a resampling technique drawing multiple random subsamples from the original dataset and repeatedly computing the same test statistic. The results from the subsamples are pooled into a combined estimate. Bootstrapping also allows obtaining reliable regression coefficients for data with skewed distributions, non-normally distributed residuals, for data that lack homoscedasticity or rely on very few observations. It produces robust standard errors, confidence intervals and *p*-values even if the assumptions of linear regression are violated (Urban & Mayerl, 2018; Mooney & Duval, 1993; Efron, 1981). Furthermore, the likelihood of *type I error* of erroneously rejecting the null hypothesis is reduced when bootstrapping is applied.

In addition, although the parsimony of predictor variables is important in linear regression and particularly for smaller samples, the recommendations in terms of how many independent variables should be included diverge considerably. Previous researchers stated that having approximately a sample size of at least ten times the number of independent variables is appropriate, whereas others recommended that the ratio of observations to predictor variables should not be lower than five (Ryan, 2009; VanVoorhis & Morgan, 2007; Hair et al., 1995; Miller & Kunce, 1973; Halinski & Feldt, 1970). Recently, it was even found that only two observations per independent variable might be sufficient to produce regression coefficients with a bias of less than 10 % (Austin & Steyerberg, 2015).

In this case, it was decided to follow the more conservative approach of using at least seven observations per independent variable, in most regressions even more, depending on the number of complete cases without missing values and the theoretical necessity to include certain predictor variables. In order to obtain parsimonious regression models, demographic, cultural and structural control variables with non-significant two-tailed Pearson correlation coefficients were excluded from the analysis (Cuervo-Cazurra et al., 2016). For each dependent variable – BIB, BIM, IAB, IAM, AffComm_1, AffComm_2, AffComm_3, Perf_IA, Perf_B, Perf_M and Goveff – the following statistics were computed:

- Descriptive statistics and correlation coefficients;
- Unstandardized estimates;

- Confidence intervals;
- Significance;
- Model fit;
- Adj. R^2
- Collinearity diagnostics;
- *Durbin-Watson* statistic.

Additionally, the bootstrapped standard errors and bias-corrected accelerated confidence intervals were retrieved.

5.7.2 Path analysis

Path analysis is a methodological extension of multiple regression analysis. It is used for "examining causal patterns among a set of variables" and for providing "estimates of the magnitude and significance of the hypothesized causal connections among sets of variables displayed through the use of path diagrams" (Stage et al., 2004, p. 5). The path diagram thereby serves to visualize the relationships between the independent and the dependent variables with arrows pointing in the theoretical direction of the relationship. Independent variables are termed *exogenous* variables and dependent variables are referred to as *endogenous* variables.

Unlike multiple regression analysis, path analysis allows estimating direct and indirect relationships with multiple dependent variables (Stage et al., 2004, p. 6). Despite these advantages, making causal inferences from path analysis is not recommended since path diagrams only validate the correlation structure but not the direction of the hypothesized relationships – or as Heise (1969) put it concisely: "A structural model is an explicit and quantitative statement of theory, hence, it serves to explain why things vary together as they do" (p. 42).

Path analysis enables the researcher to make correlations between error terms, which has been widely debated. Simply correlating error terms without referring to a specific theoretical argument might reduce the confirmative character of the analysis and make it more exploratory. Hermida (2015) illustrated that even though correlated errors "do not significantly alter parameter estimates of a measurement or structural model, they can still mask the underlying structure of the modeled relationship" (p. 7; Tomarken &

Waller, 2003; Gerbing & Anderson, 1984). The counterargument states that "to the degree that two residuals correlate, there is evidence that there exists a cause of both of the variables to which the residuals are attached but that is not specified in the model" so that correlated error terms allow an estimate of this extraneous variable (Hermida, 2015; p. 7; Fornell, 1983). According to *systems theory*[39], variables in corporate governance research are likely to be correlated and affected by common unobserved causes. For example, the shareholder structure as an external governance mechanism could affect the performance of both the board and senior management. Considering correlated error terms in a specific research context therefore makes sense as long as the correlations are applied with caution.

The path model was constructed based on the following rationale, which is similar to the argumentation previously used for the hypotheses: Since internal audit is an agent of the board, the variable for board performance was specified to influence internal audit performance. Because the board also oversees senior management, the performance of the board was logically also connected to the performance of senior management. The performance of internal audit, the board and senior management were then once again associated with governance effectiveness. Following Burke and Wilcox (1969), internal audit performance, board performance and senior management performance were related to the variables for communication effectiveness. In order to compare the direct relationship between effective communication and governance effectiveness with the indirect association via the performance of internal audit, the board and senior management, the variable for effective communication was designated with a direct path to governance effectiveness. Only the two variables relating to communication effectiveness between internal audit and the board and between internal audit and senior management had correlated error terms. The correlation of error terms was theoretically justified because communication effectiveness can be influenced by underlying cultural, structural, relational and individual factors so that the unobserved common causes for these two variables might correlate. All other error terms remained uncorrelated.

The aforementioned specification of the path diagram resulted in a non-recursive model, which are methodologically preferred over recursive models that rely on feedback loops and can provoke issues with causality as well as with the validity and the reliability of

[39] Also refer to section 2.1.

the parameter estimates. The path analysis was conducted using the statistics software *IBM SPSS Amos Graphics Version 25*.

5.7.3 Content analysis

To analyze the qualitative data that were obtained through the open questions in the survey questionnaire, a cross-case content analysis was applied. Cross-case content analysis is used to categorize the content of narrative text through "searching the qualitative data for patterns and themes without entering the analysis with preconceived analytical categories" (Patton, 2015, p. 551). Within the methodology of cross-case content analysis, researchers typically apply either *the general inductive approach*, *grounded theory*, *discourse analysis* or *phenomenology* (Thomas, 2006, p. 241).

The *general inductive approach* evaluates specific concepts in the qualitative data, whereby the raw data are broken down into indicators or themes, which are then related to each other through comparison while raising the level of abstraction (Punch, 2014). During the coding phase, the researcher reduces the number of concepts until a framework of more abstract second-order concepts emerges. The qualitative implications are eventually conveyed through a description of the most important concepts. Similarly, *grounded theory* uses *open coding*, *axial coding* and *selective coding* to identify conceptual indicators in the data, to combine these indicators into concepts and then raise the level of abstraction towards interrelated core categories (Corbin & Strauss, 1990; Strauss & Corbin, 1994). Finally, *discourse analysis* examines the data for multiple meanings while *phenomenology* focuses on the analysis of subjective experiences.

Content analyses based on the *general inductive approach* and *grounded theory* share many conceptual similarities since both methodologies aim at "generating new concepts, explanations, results and/or theories from the specific data of a qualitative study" (Patton, 2015, p. 67). Nonetheless, compared to the *general inductive approach*, *grounded theory* requires a very detailed and extensive dataset in order to generate a new theory about the research phenomenon (Punch, 2014; Pidgeon & Henwood, 1997). When applying *grounded theory*, the researcher should have no prior knowledge about applicable theories to avoid bias in the analysis. Even though the full *grounded theory* approach is rarely applied, researchers often adopt its three coding phases (Punch, 2014).

Consequently, the *general inductive approach* the selected methodology for the qualitative analysis, whereby the coding techniques proposed by Corbin and Strauss (1990) were applied: First, *open coding* was used to fracture the data into indicators. In this case, the terminology of the *open codes* remained as close to the actual narrative content as possible, resulting in so-called "in-vivo codes". To provide an example, the following two text passages can be broken down into the indicators, or in-vivo codes, that are shown in the right column.

Table 22: Open coding example

Case	Excerpt	Indicators[40]
25	"Effective "communication must be fair, relevant, constructive and reliable. A foundation of trust is required to establish effective communication. Agreement about the role and responsibilities of the audit department is important so there are no expectation gaps."	(1) "fair", (2) "relevant", (3) "constructive", (4) "reliable"; (5) "trust", (6) "expectation management"
48	Effective communication is characterized by "transparency, open and constructive communication, support by the board, understanding each other's expectations".	(7) "transparent and open", (3) "constructive", (8) "support by the board", (6) "expectation management"

After the *open coding* process, *axial coding*, which can also be referred to as theoretical coding, was applied to establish conceptual links between the in-vivo indicators. Once again, to remain as close to the authentic wording of the respondents as possible, the labels of the indicators were maintained as labels of the first-order concepts whenever it was possible and practicable.

[40] The numbering is exemplary and for illustrative purposes.

Table 23: Axial coding example

Indicators generated through open coding	First-order concepts generated through axial coding
(1) "fair", (2) "relevant", (3) "constructive", (4) "reliable"; (5) "trust", (6) "expectation management" (7) "transparent and open", (3) "constructive", (8) "support by the board", (6) "expectation management"	"Communication quality" ((1)-(4), (7)), "trust" (5), "expectation management" (6), "support by the board" (8)

In a last step, during the *selective coding* phase, the level of abstraction of the data was raised through identifying similarities in all first-order concepts and summarizing as many first-order concepts as possible under an appropriate second-order concept (Punch, 2014, p. 178).

Table 24: Selective coding example

Labels generated through axial coding	Second-order concepts generated through selective coding
"Communication quality" ((1)-(4), (7), (8)) "Trust" (5), "expectation management" (6), "support by the board" (8)	Communication quality Relationship

5.8 Chapter summary

This chapter dealt with describing the methodological approach. Since the research phenomenon is relevant for internal auditors and researchers alike, it was ensured that the empirical analysis considered both the professional guidance by the IIA as well as hypotheses based on the theories introduced in the second chapter. To accommodate to its exploratory nature and investigate the applicability of the IIA Standards, the first research question regarding of the *constituents* of effective communication was analyzed through several questions with predetermined answer possibilities. Meanwhile, the second and the third research question were evaluated through hypotheses to test the validity of the *theory of planned behavior*[41] for predicting the *antecedents* (RQ2) of effective communication, as well as the validity of *systems theory*[42], *principal agency theory*[43]

[41] Also refer to section 2.4.
[42] Also refer to section 2.1.
[43] Also refer to section 2.2.

and the *knowledge-based view of the firm*[44] for predicting the *outcomes* of effective communication (RQ3). All research questions were additionally analyzed through an open question at the end of the survey to obtain complementary qualitative insights. By this means, the implications from the different methodologies could be triangulated and complemented.

In line with the recommendations of Edmondson and McManus (2007), a *mixed methods strategy* was applied consisting of statistical tests for the theoretically derived hypotheses and a qualitative content analysis for all research questions. The data analysis methodology for the quantitative analysis was hierarchical multiple regression in combination with a complementary path analysis, whereby for both methods software from *IBM SPSS* was used. The qualitative data were explored through applying multiple coding phases, namely *open coding*, *axial coding* and *selective coding,* which served to identify key indicators in the raw data, to establish conceptual links and to raise the level of abstraction towards second-order concepts. The qualitative content analysis consequently enabled the researcher to assess the research questions quite independently from any existing theory.

[44] Also refer to section 2.3.

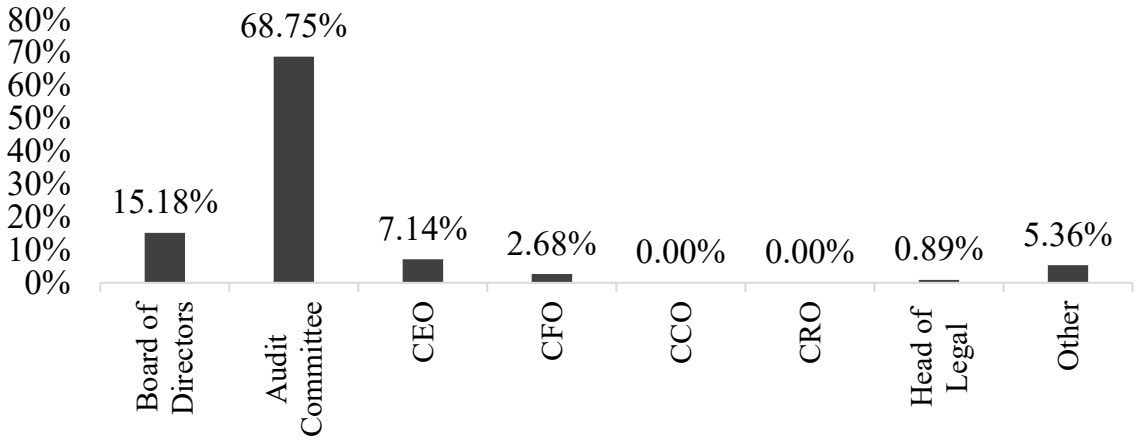
6 Descriptive results

This chapter is dedicated to presenting the descriptive results of the survey, providing the reader with a preliminary understanding of the communication practices between internal audit and the board and senior management. The descriptive insights should further highlight which quality criteria and communication channels the respondents perceived as particularly important for effective communication.

6.1 Functional reporting line and frequency

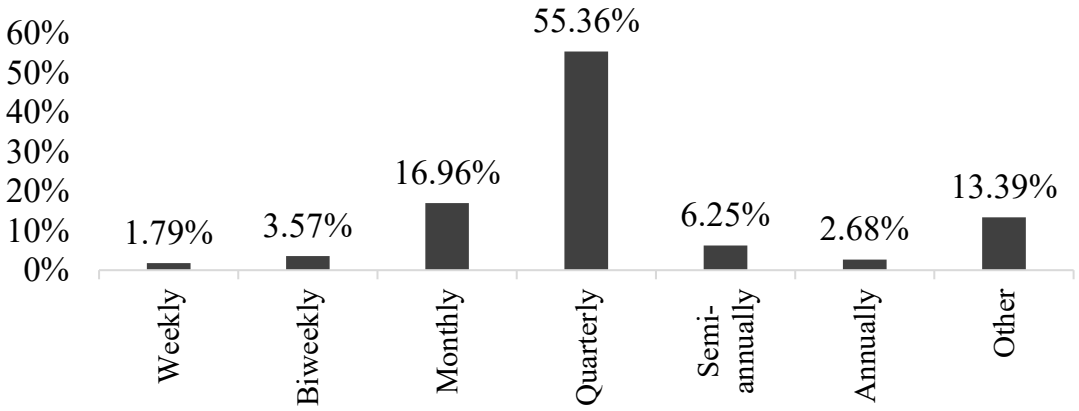
In line with the IIA Standards and the *Three Lines of Defense* model, the majority of the respondents reported functionally to the board (15.18 %) and even more frequently to the audit committee (68.75 %). Only a combined 10.71 % reported functionally to senior management, specifically 7.14 % to the CEO, 2.68 % to the CFO and 0.89 % to the Head of Legal. A little over five percent of the respondents, which were subsumed under the category "other", indicated to report functionally to the Chairman of the Board, to both the board of directors and the audit committee or to an equivalent of the board in the public sector. No respondents reported functionally to the Chief Compliance Officer (CCO) or to the Chief Risk Officer (CRO). Overall, it could be concluded that most respondents fulfilled the requirement of a functional reporting line to the board or to the audit committee.

Figure 16: Functional reporting line



With respect to the frequency of functional reporting, most respondents had a quarterly reporting schedule (55.36 %), followed by a monthly schedule (16.96 %), a semi-annual schedule (6.25 %) and a biweekly schedule (3.57 %). Very few respondents diverted from these more common practices – 1.79 % of the respondents report on a weekly basis and 2.68 % report only once a year. Then again, 13.39 % indicated to have completely different functional reporting schedules that were not specified, such as bimonthly reporting, reporting five times a year, quarterly reporting to the audit committee plus a flexible number of private meetings, reporting every time an audit report is completed or reporting at least two to three times a year. Overall, the functional reporting seemed to coincide with the release of an internal audit report or to occur around the time of board or audit committee meetings.

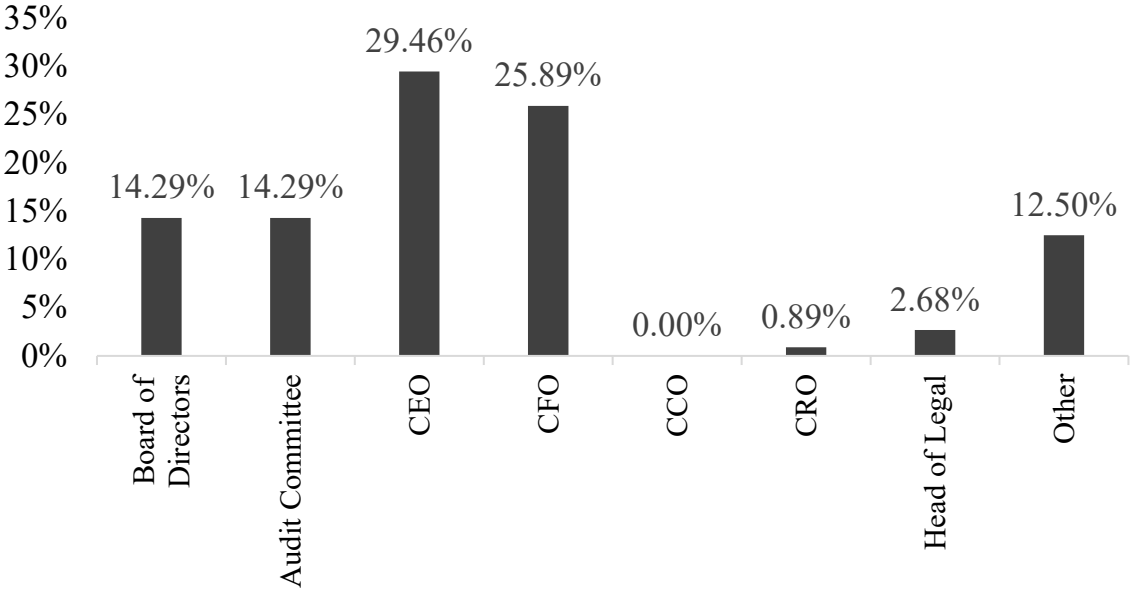
Figure 17: Functional reporting frequency



6.2 Administrative reporting line and frequency

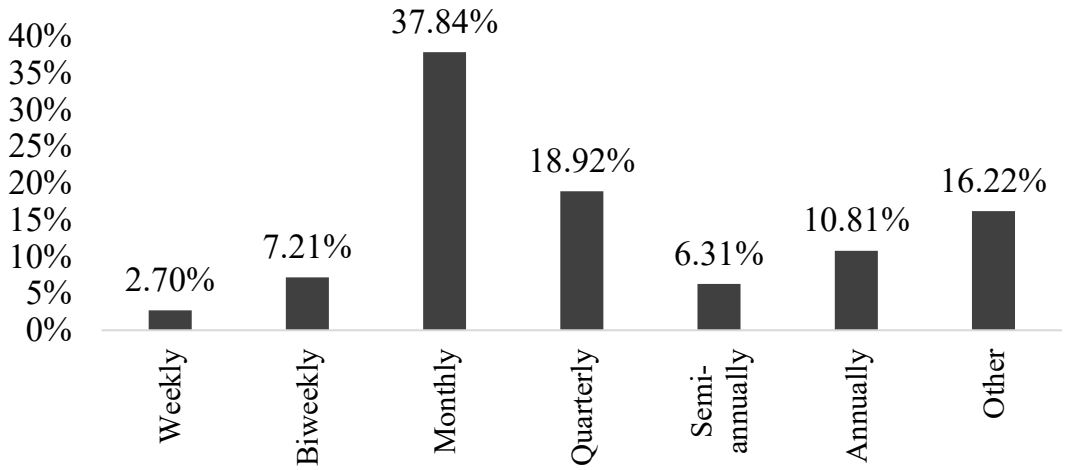
The majority of the respondents reported administratively to senior management, with 29.46 % reporting to the CEO, 25.89 % to the CFO, 0.89 % to the CRO and 2.68 % to the Head of Legal. 14.29 percent of the respondents reported administratively to the board, respectively to the audit committee. Furthermore, 12.50 % of the respondents that were represented in the category “Other” stated that they reported to the President or to the Chairman of the Board, to the COO, to different members of senior management, to the Head of Strategy or to the equivalent of senior management in the public sector.

Figure 18: Administrative reporting line



On average and as anticipated, administrative reporting occurred more frequently than functional reporting, with 37.84 % of the respondents reporting on a monthly and 18.92 % reporting on a quarterly basis. Other reporting schedules than weekly, biweekly, monthly, quarterly, semi-annual and annual reporting, which were adopted by 16.22 % of the respondents, included for example “on demand”, “ongoing” or “continuous” reporting.

Figure 19: Administrative reporting frequency



6.3 Communication content

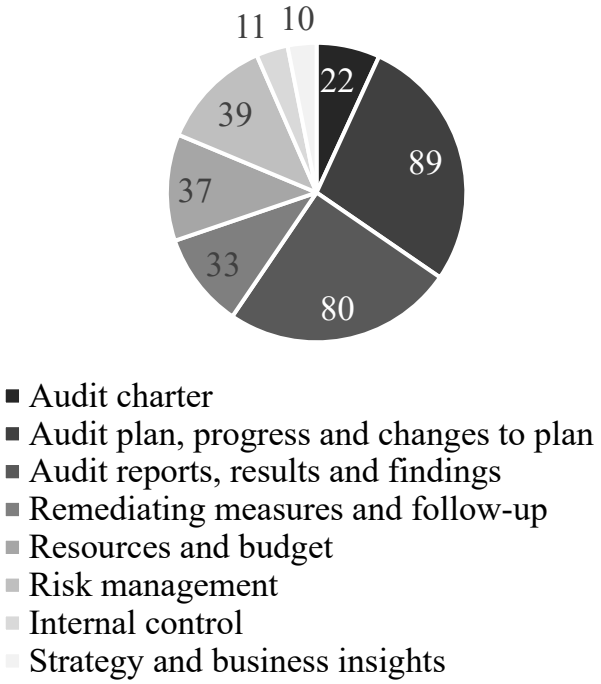
The following two sections illustrate the most important content-related aspects that the respondents stated to discuss with the board or senior management. In particular, it will be shown in how far the IIA Standards 2060 – *Reporting to Senior Management and the Board* and 2410 – *Criteria for Communicating* were reflected in the responses.[45]

6.3.1 Communication content with the board

The most relevant content that is communicated to the board concerned the audit plan, the audit plan progress or changes made to the audit plan (89 mentions), followed by matters associated with the audit report (80 mentions). Also quite important were aspects related to risk management (39 mentions), resources and budget (37 mentions), remediating measures and follow-up (33 mentions) and the audit charter (22 mentions). The respondents moreover suggested that aspects with regard to internal control or strategy and business insights were communicated with a lower priority.

[45] Multiple answers were possible.

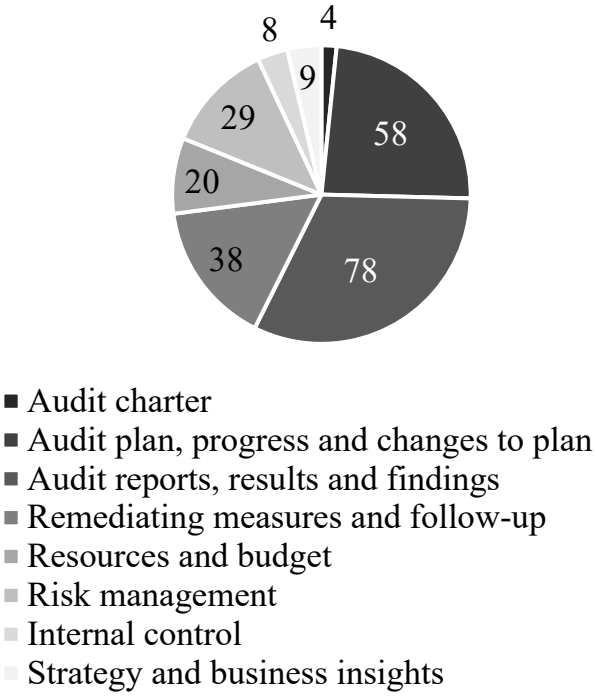
Figure 20: Communication content with the board



6.3.2 Communication content with senior management

With respect to the communication content with senior management, most respondents found that the exchange concerning audit reports, audit results and audit findings (78 mentions) or the communication about the audit plan, its progress and changes (58 mentions) represented the most important aspects. Remediating measures and follow-up were considered to be particularly relevant by 38 respondents, resources and budget by 20 respondents, risk management by 29 respondents, internal control-related matters by 8 respondents and finally strategy and business insights by 9 respondents. Like for the communication with the board, the internal audit engagement's scope and objectives were not mentioned explicitly.

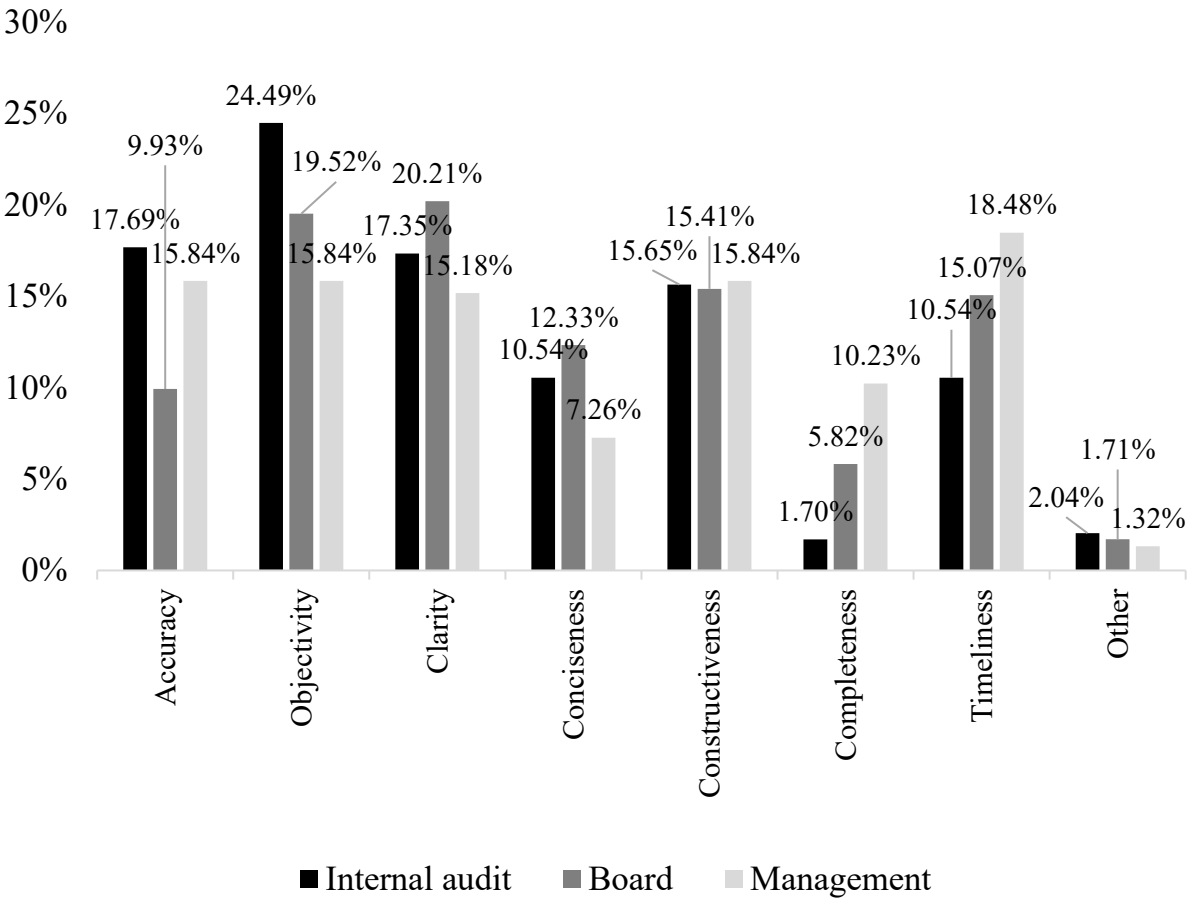
Figure 21: Communication content with senior management



6.4 Communication quality

The subsequent figure illustrates the most central communication quality criteria for communication by internal audit, by the board and by senior management. For communication by internal audit, *objectivity* (24.49 %), *accuracy* (17.69 %) and *clarity* (17.35 %) were the most relevant quality criteria, whereas for communication by the board, the survey respondents selected the criteria *clarity* (20.21 %), *objectivity* (19.52 %) and *constructiveness* (15.41 %) most frequently. Lastly, for communication by senior management, *timeliness* (18.48 %) as well as *accuracy*, *objectivity* and *constructiveness* (15.84 % each) were regarded as the most crucial quality criteria. While *constructiveness* was considered to be approximately equally important for communication by internal audit, by the board and by senior management, *objectivity* was by far the most essential communication quality criterion for communication by internal audit and the least critical communication quality criterion for communication by senior management.

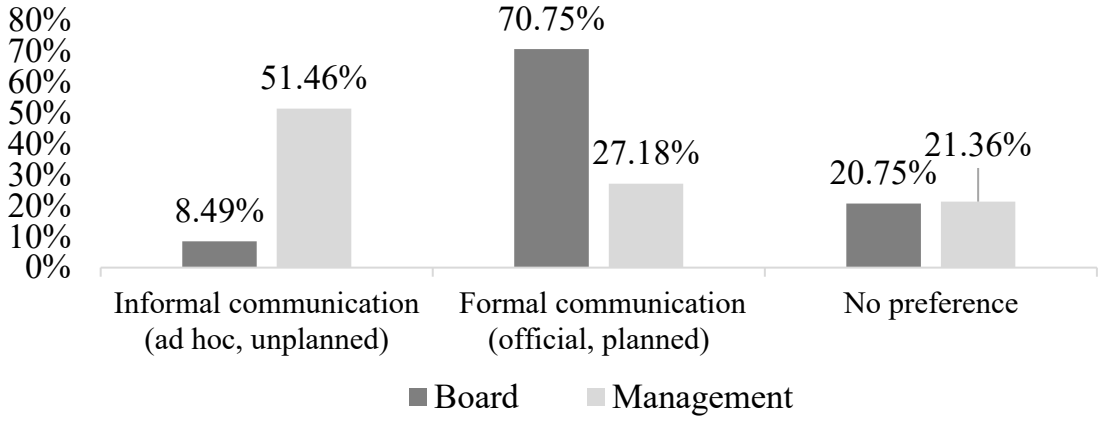
Figure 22: Communication quality criteria



6.5 Communication channel

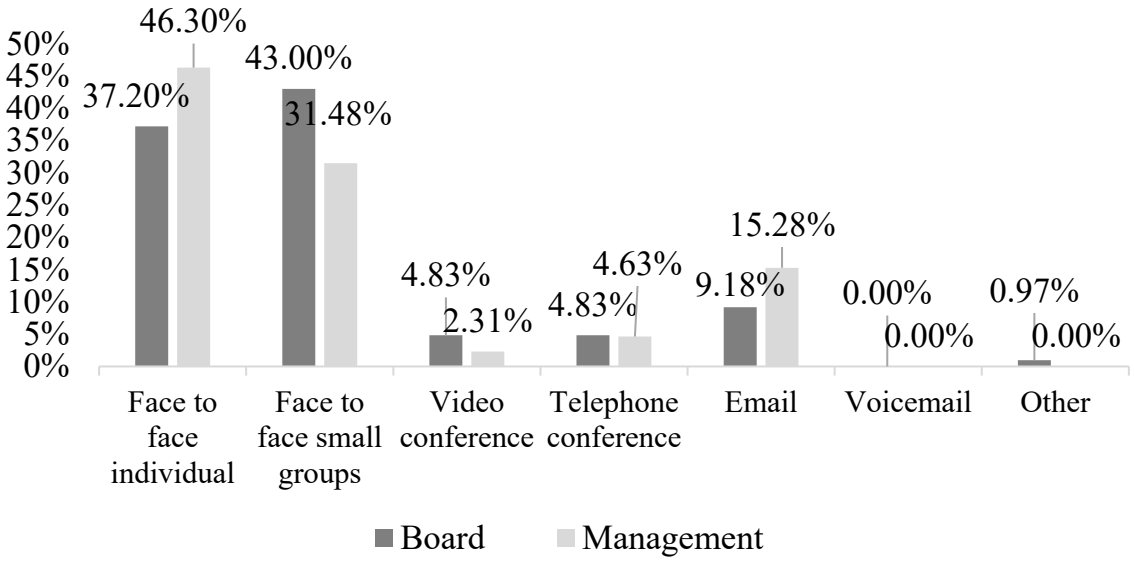
With regard to the communication channel for communication with the board and senior management, it was previously differentiated between informal communication that occurs on an ad hoc and often unplanned basis, and formal communication, which mostly happens according to a planned schedule and through officially designated communication channels. The descriptive results showed that for communication with the board on the one hand, the respondents preferred formal communication (70.75 %) to informal communication (8.49 %). For communication with senior management on the other hand, informal communication (51.46 %) was greatly favored over formal communication (27.18 %). Approximately one fifth of the respondents signaled no preference to communicate formally or informally with the board, respectively with senior management.

Figure 23: Formal vs. informal communication



Moreover, the respondents preferred personal communication – either face-to-face individual communication or face-to-face communication in small groups – to more impersonal interaction relying for example on video/telephone conferences, email or voicemail. Face-to-face individual communication was preferred especially for communication with senior management (46.30 %), whereas face-to-face communication in small groups was the most frequently chosen channel for communication with the board (43.00 %). Email, although somewhat more impersonal than video or telephone conferences, was still relatively popular perhaps due to its easy application, efficiency and the possibility of documentation.

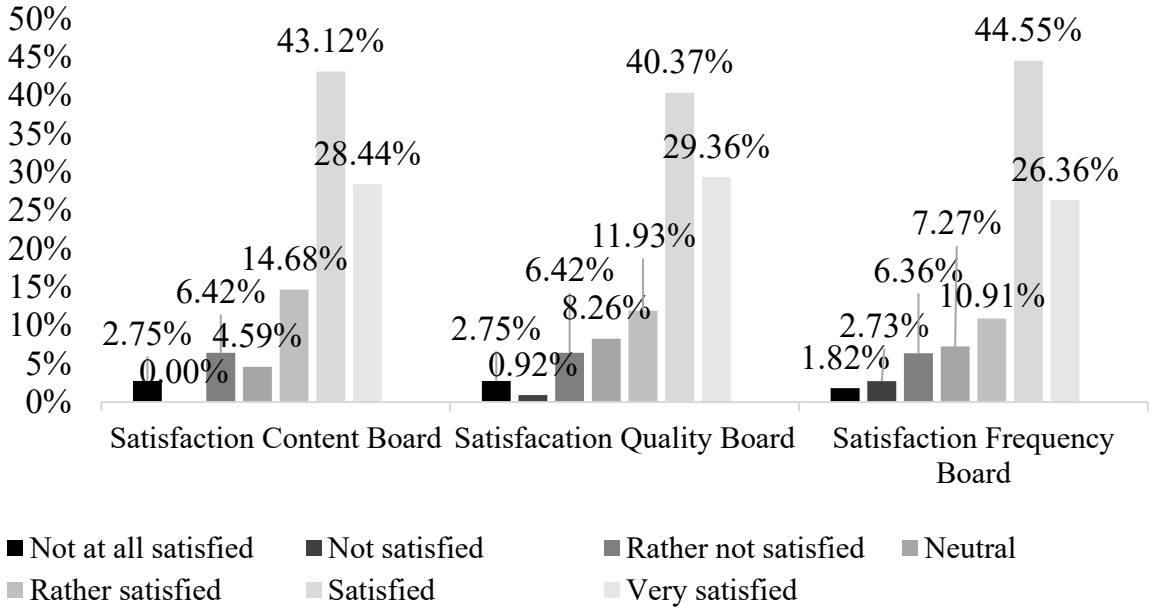
Figure 24: Communication channel



6.6 Communication satisfaction

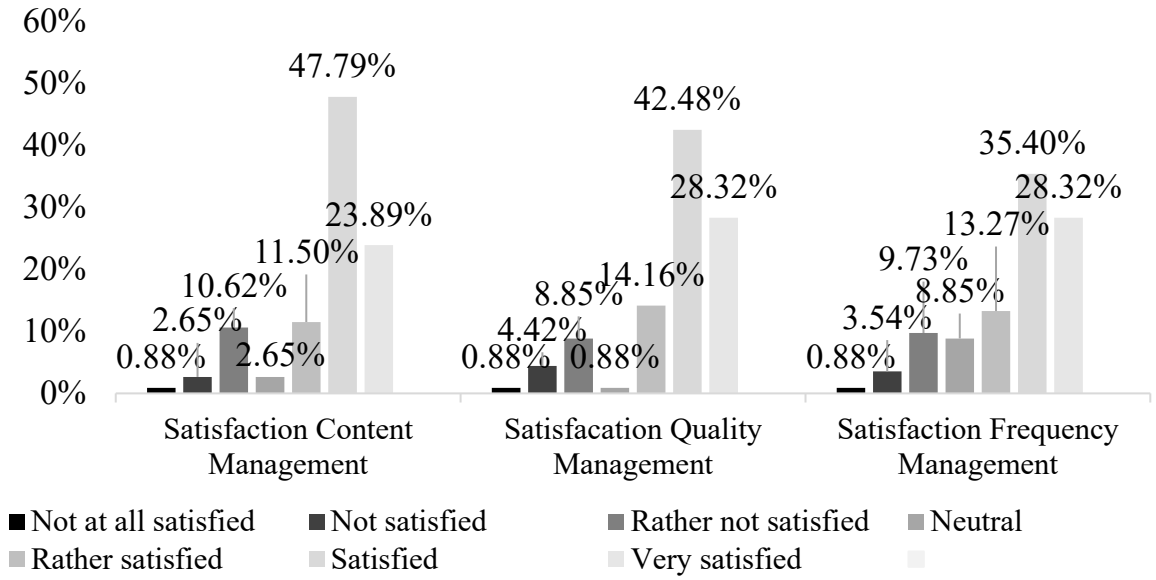
By and large, the respondents were rather satisfied with the content, quality and frequency of the communication with the board of directors although also the options "not at all satisfied", "not satisfied" and "rather not satisfied" were selected by some, albeit rarely.

Figure 25: Communication satisfaction with the board



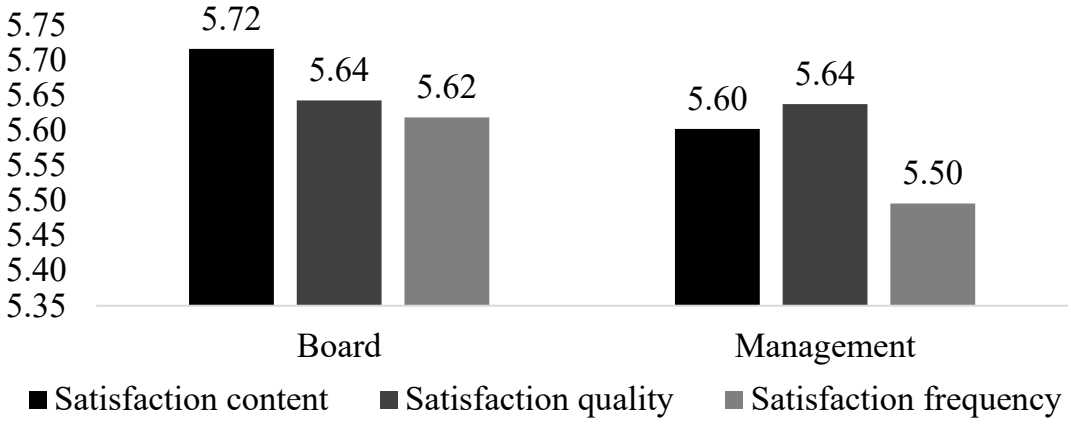
Regarding the communication with senior management, the respondents were likewise rather satisfied than dissatisfied with its content, quality and frequency. Compared to the satisfaction with the communication to the board, two relatively distinct clusters of opinions became apparent for the respondents' satisfaction with the content and quality of the communication to senior management. The results suggested a larger percentage of respondents who were rather satisfied, satisfied or very satisfied and a smaller percentage of respondents who were rather not satisfied, not satisfied or even not at all satisfied. Put differently, fewer respondents indicated a neutral opinion regarding the communication content and quality with senior management than this was the case for the communication with the board.

Figure 26: Communication satisfaction with senior management



By directly comparing the average opinions for the respondents' satisfaction with the communication with the board and with senior management on a seven-point *Likert* scale, it could be elicited that the respondents were slightly more satisfied with the communication content and frequency with the board than with the communication content and frequency with senior management. However, the absolute differences were relatively small.

Figure 27: Communication satisfaction in direct comparison



6.7 Communication effectiveness

For a more in-depth analysis, the respondents were asked in an open question about their current perception of the communication effectiveness with the board and senior management. On a case by case basis, the qualitative data were reverse-assigned to the categories (1) *very poor*, (2) *poor*, (3) *mixed*, (4) *good* or (5) *very good*. Instead of a seven-point scale, a five-point scale was used in this case because a seven-point scale would have increased the risk of attributing a response to a false category. A three-point scale however might have provided too little accuracy and precision for the analysis. Overall, the qualitative answers gave a rich insight into the current status quo in terms of communication effectiveness. Some respondents considered the communication with the board to be better than the communication with senior management, whereas others evaluated the situation in their organizations the other way around. It was for example stated that there was "perfect communication with senior management, but no communicaiton with the board", that "communication with the board could be better, more constructive" while "between internal audit and senior management the situation is okay". Another respondent illustrated that they "always have to find a balance between independence and being in loop for information gathering" with senior management and that internal audit is often torn between "the compliance approach and the business improvement approach". In addition, it was pointed out by one respondent that the audit committee was sometimes "too far away from internal audit".

On average, the respondents replying to this question evaluated their communication effectiveness with the board and senior management between "*mixed*" and "*good*", with a range of 4[46], a standard deviation of 1.07 and a mean of 3.5, which was slightly lower than the average response for the predefined satisfaction criteria from section 6.6. This slightly lower assessment could be due to the fact that the analysis might have been slightly influenced by researcher bias since the researcher compared the qualitative responses with the theoretically ideal state of communication effectiveness, thus using an ambitious benchmark.

[46] The minimum value was 1 and the maximum value was 5.

Table 25: Classification table with examples

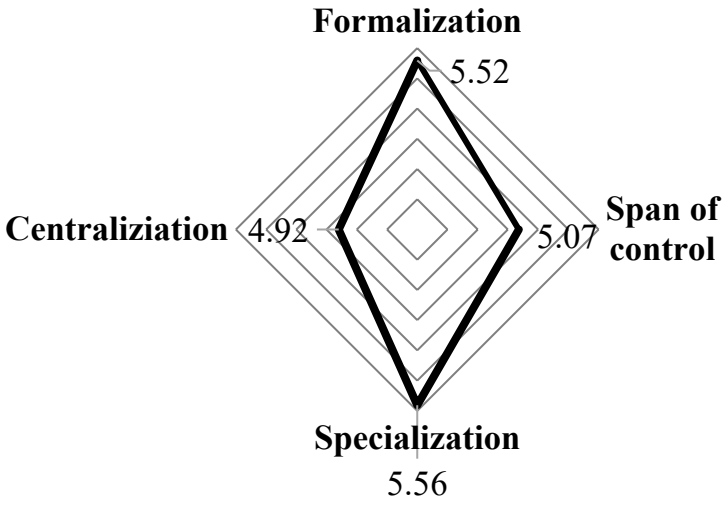
Very poor (1)	Poor (2)	Mixed (3)	Good (4)	Very good (5)
Only negative assessment	*Predominantly negative assessment*	*Mixed assessment*	*Predominantly positive assessment*	*Only positive assessment*
Example: "Communication with the audit committee does **not exist** in my organization. There is **no access** to the members for the CAE. **The audit committee never ever voiced any expectations or instructions to the internal audit function. External audit is high on the agenda, internal audit is barely represented**."	Example: "The board listens to and is ready to support the internal audit activity but it **does not want to go against management's opinion or to interfere in operational activities**. Management is interested to hear internal audit but **resistance to changes** impedes good communication; **Some react emotionally to audit findings, response time is long**."	Example: "I would **prefer more contact to the Head of the Audit Committee**, for example through quarterly meetings or calls. Formal communication is reduced more or less to meetings/calls prior to the Audit Committee meetings. In the meantime, the Head of the Audit Committee is accessible in case of any major findings or problems. Contact to senior management is more informal but okay. **Typically, they renounce to have closing meetings after an audit, which I would prefer to hold."**	Example: "Current communication is an adequate mix between informal and formal communication. Internal audit has the ear of the risk and audit committee as well as of senior management. Communication is largely free of politics and aims at the common goal to improve controls, processes, governance etc."	Example: "I feel that there is a trustful relationship between internal audit, the board and senior management, enabling a fruitful work environment and communication, which supports the objectives of the organization."

Bold font: Negative assessment.
Dotted underlining: Neutral assessment.
Steady underlining: Positive assessment.

6.8 Organizational structure

On average, the organizational structure of the represented organizations was most significantly characterized by *specialization* of tasks (5.56), followed by *formalization* of processes (5.52), *span of control* (5.07) and ultimately by *centralization of authority* (4.92). Despite this ranking, it could be concluded that all structural attributes were considerably prevalent since the mean for each structural attribute was above the middle rank of 4 (measured on a 7-point *Likert* scale).

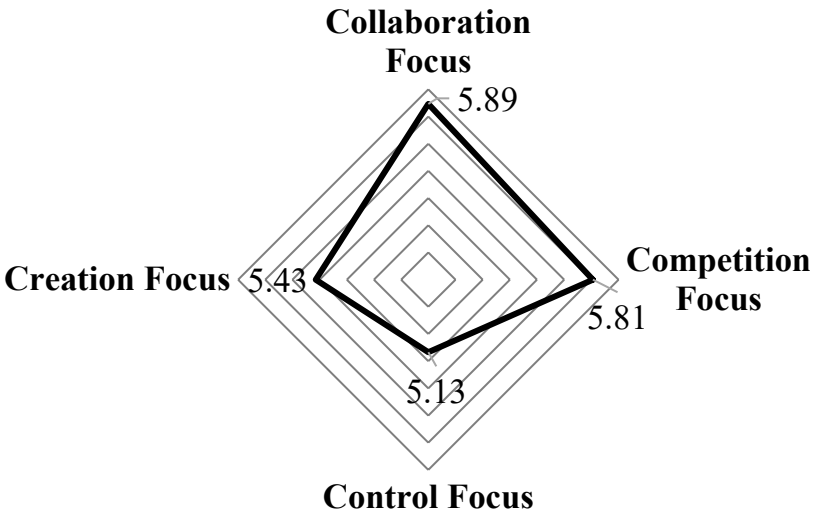
Figure 28: Organizational structure



6.9 Organizational culture

The categories *collaboration*, *creation*, *control* and *competition* based on the CVF were also measured on a seven-point *Likert* scale from (1) – *strongly disagree* to (7) – *strongly agree*. It could be inferred that the organizational culture of the respondents' organizations was most distinctly influenced by a spirit of *collaboration*, followed by a sense of external *competition*. Albeit to slightly lesser extents, also *creativity* (5.43) and *control* (5.13) were still distinct aspects of the respondents' organizational culture. On average, the respondents also confirmed the statement that the culture in their organization supported the mandate of internal audit (5.48).

Figure 29: Organizational culture



6.10 Chapter summary

This chapter provided an overview of the descriptive insights from the survey questionnaire. Thereby, it was clarified how the reporting lines are implemented, what the most relevant content that is communicated is, what the most critical communication quality criteria and the preferred communication channels are and how the respondents assessed the current effectiveness of their communication with the board and senior management. In addition, the predominant characteristics of the respondents' organizations' structures and cultures were illustrated. The descriptive findings showed that the communication quality criteria proposed by IIA Standard 2420 were supported and that the current assessment of the effectiveness of the communication with the board and senior management was perceived very differently from organization to organization. With respect to the communication channel, the participants favored formal communication with the board and informal communication with senior management although in both instances face-to-face interaction was preferred. The preference for informal communication with senior management was most likely due to the administrative reporting line, which naturally requires a more spontaneous and regular exchange on matters that concern the daily business.

7 Quantitative results

This chapter serves to present the statistical results of the regression and path model analyses. Section 7.1.1 describes the results for the hypotheses 1-5 for the antecedents of effective communication while section 7.1.2 explains the findings for the hypotheses 6-9 for the outcomes of effective communication. The results of the path model, which aimed at corroborating the results of the regression analysis, are subsequently presented in section 7.2.

7.1 Regression results

This section is concerned with illustrating the results of the hierarchical multiple regression analysis and discussing their robustness and interpretability. For the following regression models, an R^2 of 0.260 or higher signifies a strong effect of the model, whereas an R^2 between 0.130 and 0.260 signifies a medium effect (Cohen, 1992, p. 159).

7.1.1 Results for RQ2 – Antecedents (Hypotheses 1-5)

Regarding the outcome variable behavioral intention towards communication with the board (BIB), the predictors AttB, SNB and PBCB correlated significantly and approximately to the same extent with the dependent variable. Since no control variables exhibited significant two-tailed correlation coefficients, only the aforementioned predictors were included in the regression analysis. The resulting regression model was significant and explained 18 % of the variance of the endogenous variable. The *Durbin-Watson* statistic was in the range between 1.5 and 2.5, indicating no autocorrelation of the residuals.

Table 26: Regression model summary I[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.450[b]	0.203	0.180	0.83508	.000[b]	2.001

a. Dependent variable: BIB
b. Predictors: (Constant), AttB, SNB, PBCB

The regression coefficients further showed that only attitude towards the communication with the board (AttB) was a significant predictor for the behavioral intention to communicate with the board in an effective manner (BIB). The unstandardized coefficient was 0.349, suggesting that the behavioral intention increases by this extent if the attitude of internal auditors improves by one measurement unit. The significance of the predictor AttB could be maintained even after bootstrapping with 10'000 samples so that the result was considered robust to violations of the parametric assumptions.

Table 27: Regression coefficients I[a]

	Model 1	VIF
(Constant)	2.411*	
AttB	0.349*	1.086
SNB	0.125	1.555
PBCB	0.161	1.580

a. Dependent variable: BIB

Three regression models were constructed for the dependent variable behavioral intention towards effective communication with senior management (BIM). Several control variables correlated significantly with the dependent variable and were hence added to the procedure in a hierarchical manner, whereby each batch of newly included control variables resulted the calculation of a separate regression model. The first regression model included only the structural control variable for span of control (SpanContr) and was slightly above the conventional significance threshold. The second and third model, which also comprised the cultural control variables and the variables of interest, were both significant at the 0.01-level and explained 11 % and 15.8 % of the variance of the dependent variable, respectively. The *Durbin-Watson* statistic again showed no indication for autocorrelation of the residuals.

Table 28: Regression model summary II[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.165[b]	0.027	0.018	0.78316	.086[b]	
2	.367[c]	0.135	0.110	0.74571	.002[c]	
3	.452[d]	0.204	0.158	0.72541	.001[d]	1.961

a. Dependent variable: BIM
b. Predictors: (Constant), SpanContr
c. Predictors: (Constant), SpanContr, Supportive_Cult, Control
d. Predictors: (Constant), SpanContr, Supportive_Cult, Control, AttM, SNM, PBCM

With respect to the regression coefficients, no structural or cultural control variable turned out as a significant predictor for the variation of the dependent variable. Whereas the attitude variable used to be a significant and positive predictor for the behavioral intention towards effective communication with the board (BIB), it now had a negative and non-significant estimate for the behavioral intention towards effective communication with senior management (BIM). The subjective norm for effective communication with senior management (SNM) was significant at the 0.01-level and had a regression coefficient of 0.254. Even after bootstrapping, SNM was just slightly above the 0.05-level of significance. The extent to which the subjective norm requires effective communication with senior management was hence the most relevant predictor for internal auditors' intention to communicate effectively with senior management.

Table 29: Regression coefficients II[a]

	Model 1	Model 2	Model 3	VIF
(Constant)	5.849***	4.783***	4.128***	
SpanContr	0.088	0.078	0.091	1.026
Control		0.157	0.123	2.102
Supportive_Cult		0.056	-0.033	2.700
AttM			-0.105	1.462
SNM			0.254**	1.808
PBCM			0.070	1.750

a. Dependent variable: BIM

Concerning the effectiveness of communication by internal audit with the board (Comeff_IAB), the following control variables had significant correlation coefficients and were included in the regression analysis in addition to the variables of interest AttB, SNB, PBCB and BIB: Revenue, Special, Creation, Compet, Control, Collab and Supportive_Cult. The variables were once again included in the regression procedure in a

hierarchical manner. The first model, which included only Revenue as a demographic control variable, was as expected not significant. However, the subsequent three models were statistically significant and explained up to 70 % of the variance of the communication effectiveness by internal audit with the board. The highest climb in explanatory power could be observed between model three and four, whereby model four newly comprised the four variables of interest AttB, SNB, PBCB and BIB.

Table 30: Regression model summary III[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.077[b]	0.006	-0.004	1.17090	.448[b]	
2	.276[c]	0.076	0.057	1.13459	.022[c]	
3	.553[d]	0.306	0.252	1.01045	.000[d]	
4	.857[e]	0.734	0.700	0.63974	.000[e]	2.078

a. Dependent variable: Comeff_IAB
b. Predictors: (Constant), Revenue
c. Predictors: (Constant), Revenue, Special
d. Predictors: (Constant), Revenue, Special, Creation, Compet, Control, Collab, Supportive_Cult
e. Predictors: (Constant), Revenue, Special, Creation, Compet, Control, Collab, Supportive_Cult, AttB, SNB, PBCB, BIB

Of the included control variables, Special, Collab, Control and Supportive_Cult turned out significant in the regression analysis. With regard to the variables of interest, perceived behavioral control regarding communication with the board (PBCB) was the most significant predictor for changes of the dependent variable. The significance levels of the unstandardized coefficients changed merely slightly after bootstrapping.

Table 31: Regression coefficients III[a]

	Model 1	Model 2	Model 3	Model 4	VIF
(Constant)	5.865***	4.110***	2.061*	-0.511	
Revenue	-0.043	-0.030	-0.009	-0.009	1.237
Special		0.300**	0.194	0.184**	1.229
Collab			-0.181	-0.164*	2.355
Creation			0.188	-0.007	2.060
Control			0.027	-0.185*	2.552
Compet			0.066	0.085	1.224
Supportive_Cult			0.377**	0.200*	2.703
AttB				0.101	1.331
SNB				0.057	1.903
PBCB				0.739***	2.448
BIB				0.053	1.478

a. Dependent variable: Comeff_IAB

Compared to the previous regression analysis concerning the communication effectiveness with the board (Comeff_IAB), in which the final model explained 70 % of the variation of the dependent variable, the variables that were included as predictors for the variation of the communication effectiveness by internal audit with senior management (Comeff_IAM) had considerably less explanatory power. The fourth and final model comprising the demographic control variables, the structural control variables, the cultural control variables and the variables of interest had an adjusted R^2 of "only" 0.401. Moreover, the variables of interest increased the explanatory power merely by about three percent. The highest explanatory power was contributed by the cultural control variables, specifically Creation, Control, Collab and Supportive_Cult. For this reason, it could be concluded that the organizational culture plays a more important role for effective communication with senior management than for effective communication with the board.

Table 32: Regression model summary IV[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.212[b]	0.045	0.036	1.18037	.027[b]	
2	.348[c]	0.121	0.105	1.13748	.001[c]	
3	.640[d]	0.410	0.375	0.95011	.000[d]	
4	.676[e]	0.457	0.401	0.93016	.000[e]	2.058

a. Dependent variable: Comeff_IAM
b. Predictors: (Constant), Employees
c. Predictors: (Constant), Employees, Formal
d. Predictors: (Constant), Employees, Formal, Creation, Control, Collab, Supportive_Cult
e. Predictors: (Constant), Employees, Formal, Creation, Control, Collab, Supportive_Cult, AttM, SNM, PBCM, BIM

The regression coefficients showed that merely Supportive_Cult was significant at the 0.05-level although the variable for perceived behavioral control for communication with senior management (PBCM) was only marginally above the conventional significance threshold with a *p*-value of 0.057. After bootstrapping however, the significance of PBCM dropped while the significance of Supportive_Cult could be upheld. This indicated that the estimated confidence interval for Supportive_Cult was robust irrespective of the empirical distribution, whereas the non-bootstrapped confidence interval for PBCM relied on the parametric assumption of multivariate normality. The finding further supported the theoretical understanding that an organizational culture that supports the mandate of internal audit benefits the perception of internal audit in the organization, which in turn may affect internal communication positively.

Table 33: Regression coefficients IV[a]

	Model 1	Model 2	Model 3	Model 4	VIF
(Constant)	6.126***	4.690***	2.722***	0.430	
Employees	-0.131*	-0.151**	-0.081	-0.087	1.145
Formal		0.276**	0.076	0.090	1.453
Collab			-0.232*	-0.177	2.272
Creation			0.205*	0.163	1.986
Control			0.123	0.074	2.310
Supportive_Cult			0.436***	0.278*	3.340
AttM				0.110	1.498
SNM				0.026	2.228
PBCM				0.254	2.165
BIM				0.149	1.253

a. Dependent variable: Comeff_IAM

7.1.2 Results for RQ3 – Outcomes (Hypotheses 6-9)

In consistence with the results of the PCA from section 5.6.2, the first subscale of affective commitment (AffCommitment1) included only the survey items relating to the commitment of internal auditors towards the organization. In total, five regression models were constructed. The demographic control variables Age and IIA membership were analyzed first, the structural control variable Special was added secondly to the regression procedure, the cultural control variables Collab, Creation, Control and Supportive_Cult thirdly, the variables of interest fourthly and internal audit performance and governance effectiveness were included lastly to corroborate the *p*-values for the variables of interest. The model summary suggested that all models were significant at least at the 0.05-level. The demographic controls Age and IIA membership explained 5.6 % of the variation of AffCommitment1 alone and all variables taken together had an adjusted R^2 of 0.317.

Table 34: Regression model summary V[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.274[b]	0.075	0.056	0.83715	.021[b]	
2	.369[c]	0.136	0.109	0.81331	.002[c]	
3	.577[d]	0.333	0.284	0.72936	.000[d]	
4	.605[e]	0.366	0.304	0.71905	.000[e]	
5	.626[f]	0.392	0.317	0.71202	.000[f]	1.948

a. Dependent variable: AffCommitment1
b. Predictors: (Constant), Age, IIAMember
c. Predictors: (Constant), Age, IIAMember, Special
d. Predictors: (Constant), Age, IIAMember Special, Collab, Creation, Control, Supportive_Cult
e. Predictors: (Constant), Age, IIAMember Special, Collab, Creation, Control, Supportive_Cult, Comeff_BIA, Comeff_MIA
f. Predictors: (Constant), Age, IIAMember Special, Collab, Creation, Control, Supportive_Cult, Comeff_BIA, Comeff_MIA, Perf_IA, Goveff

Although all regression models were significant, this was not the case for the majority of predictors. Only Control was significant at the 0.05-level, albeit negatively related to the dependent variable. Bootstrapping did not change the significance of this variable so a stronger control culture could be assumed to be associated with reduced affective commitment of internal auditors towards their organization.

Table 35: Regression coefficients V[a]

	Model 1	Model 2	Model 3	Model 4	Model 5	VIF
(Constant)	5.151***	4.178***	3.267***	2.984***	2.616***	
Age	0.201*	0.189*	0.103	0.084	0.114	1.140
IIAMember	0.344	0.236	0.182	0.197	0.194	1.247
Special		0.200*	0.108	0.096	0.082	1.195
Collab			0.096	0.122	0.126	2.033
Creation			0.189*	0.135	0.115	2.000
Control			-0.143	-0.169*	-0.219*	2.315
Supportive_Cult			0.176*	0.088	0.118	3.530
Comeff_BIA				0.075	0.037	2.130
Comeff_MIA				0.141	0.095	2.892
Perf_IA					0.007	1.499
Goveff					0.165	1.720

a. Dependent variable: AffCommitment1

After the first subscale, also the second subscale for affective commitment (AffCommitment2) relating to internal auditors' emotional attachment to and identification with their work was analyzed as a dependent variable. The Pearson correlations showed that the two variables of interest, communication effectiveness by the board and communication effectiveness by senior management, did not significantly correlate with AffCommitment2. Consequently, it was not surprising that the second regression model, which newly included the variables of interest, reduced the significance of the regression model compared to its predecessor that comprised only the demographic control variable IIA membership. Accordingly, also the adjusted R^2 was decreased due to the two variables of interest adding unexplained variance. Only the third model, which additionally comprised the variable for internal audit performance (Perf_IA), reversed this effect with a *p*-value of 0.001 and 14.1 % of explained variance. Nonetheless, neither model eventually explained a very large proportion of the variance of the dependent variable. The emotional attachment to and identification of internal auditors with their work hence did not appear to depend critically on any variables that were included in the analysis.

Table 36: Regression model summary VI[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.270[b]	0.073	0.064	1.0753	.005[b]	
2	.289[c]	0.084	0.057	1.0793	.029[c]	
3	.416[d]	0.173	0.141	1.0300	.001[d]	2.043

a. Dependent variable: AffCommitment2
b. Predictors: (Constant), IIAMember
c. Predictors: (Constant), IIAMember, Comeff_MIA, Comeff_BIA
d. Predictors: (Constant), IIAMember, Comeff_MIA, Comeff_BIA, Perf_IA

The regression coefficients illustrated moreover that IIA membership and the performance of internal audit (Perf_IA) were significantly related to the dependent variable. After bootstrapping the *p*-values changed only slightly so that the results could be considered robust.

Table 37: Regression coefficients VI[a]

	Model 1	Model 2	Model 3	VIF
(Constant)	5.237***	4.984***	3.549***	
IIAMember	0.780**	0.713*	0.605*	1.072
Comeff_BIA		0.124	0.003	1.925
Comeff_MIA		-0.068	-0.114	1.683
Perf_IA			0.428**	1.359

a. Dependent variable: AffCommitment2

The four hierarchical regression models that were constructed for the third subscale of the affective commitment construct (AffCommitment3) only accounted for a rather small proportion of its variance, namely maximally for 8.3 %. The third model, which also contained the variables of interest, was even found to reduce the explanatory power rather than to increase it. Therefore, it could already be inferred that internal auditors' work-related commitment was not significantly affected by the effectiveness of the communication by the board or by senior management.

Table 38: Regression model summary VII[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.210[b]	0.044	0.035	0.5546	.031[b]	
2	.267[c]	0.071	0.053	0.5493	.022[c]	
3	.273[d]	0.075	0.038	0.5537	.095[d]	
4	.356[e]	0.127	0.083	0.5406	.017[e]	1.870

a. Dependent variable: AffCommitment3
b. Predictors: (Constant), Age
c. Predictors: (Constant), Age, Supportive_Cult
d. Predictors: (Constant), Age, Supportive_Cult, Comeff_BIA, Comeff_MIA
e. Predictors: (Constant), Age, Supportive_Cult, Comeff_BIA, Comeff_MIA, Perf_IA

The regression coefficients further disclosed that only internal audit performance (Perf_IA) was significantly related to AffCommitment3, which was not surprising because, theoretically, internal audit performance may also be a consequence of work-related commitment and reverse causality could apply in this case. Still, the unstandardized estimate was relatively low with a value of 0.169 and significant only at the least restrictive level 0.05-level.

Table 39: Regression coefficients VII[a]

	Model 1	Model 2	Model 3	Model 4	VIF
(Constant)	6.011***	5.695***	5.781***	5.282***	
Age	0.131*	0.111	0.113	0.104	1.082
Supportive_Cult		0.073	0.090	0.048	2.147
Comeff_BIA			-0.030	-0.078	1.944
Comeff_MIA			-0.005	0.007	2.599
Perf_IA				0.169*	1.483

a. Dependent variable: AffCommitment3

In summary, not many significant predictors could be identified for all three subscales of affective commitment, suggesting that internal auditors have a high intrinsic commitment towards their organization and their mandate that is robust to external influences.

The hierarchical multiple regression analysis for internal audit performance (Perf_IA) as the dependent variable resulted in five regression models, whereby four models were significant with *p*-values below the 0.001-level. The second model, which included only Certification and the cultural control variables, explained already more than one fifth of

the variation of internal audit performance. The fifth model, containing all control variables as well as the variables of interest, ultimately explained 44.7 % of the variance of the dependent variable.

Table 40: Regression model summary VIII[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.116[a]	0.013	0.004	0.92077	.244[b]	
2	.510[b]	0.260	0.230	0.80950	.000[c]	
3	.598[c]	0.357	0.317	0.76226	.000[d]	
4	.666[d]	0.443	0.389	0.72102	.000[e]	
5	.720[e]	0.518	0.447	0.68573	.000[f]	1.603

a. Dependent variable: Perf_IA
b. Predictors: (Constant), Certification
c. Predictors: (Constant), Certification, Control, Creation, Supportive_Cult
d. Predictors: (Constant), Certification, Control, Creation, Supportive_Cult, Comeff_BIA, Comeff_MIA
e. Predictors: (Constant), Certification, Control, Creation, Supportive_Cult, Comeff_BIA, Comeff_MIA, AffCommitment1, AffCommitment2, AffCommitment3
f. Predictors: (Constant), Certification, Control, Creation, Supportive_Cult, Comeff_BIA, Comeff_MIA, AffCommitment1, AffCommitment2, AffCommitment3, BI, Goveff, Perf_B, Perf_M

Several predictors were found to be significantly related to internal audit performance in the regression procedure, namely Certification, the extent to which the corporate culture supported the mandate of internal audit (Supportive_Cult), communication effectiveness by the board (Comeff_BIA), the second subscale of affective commitment (AffCommitment2), the performance of the board (Perf_B) as well as governance effectiveness (Goveff). Whereas Certification, Supportive_Cult, Comeff_BIA, AffCommitment2 and Perf_B were positively related to internal audit performance as expected, governance effectiveness had a negative estimate, which might point towards the validity of *systems theory* according to which governance functions and activities complement or substitute each other. In this case, the hypothetical positive influence of the governance variable on internal audit performance might have been subdued due to the strong influence of the board. Overall, board performance turned out as the most significant predictor for the performance of internal audit although no conclusion could be drawn with regard to the causality of the direction. All confidence intervals were robust to bootstrapping.

Table 41: Regression coefficients VIII[a]

	Model 1	Model 2	Model 3	Model 4	Model 5	VIF
(Constant)	5.566***	3.497***	2.900***	1.371	1.861*	
Certification	0.213	0.355*	0.384*	0.276	0.316*	1.114
Creation		-0.005	-0.063	-0.068	-0.089	1.633
Control		0.034	0.013	0.006	0.034	2.546
Supportive_Cult		0.337**	0.273*	0.280**	0.252*	3.566
Comeff_BIA			0.304***	0.297***	0.204*	2.270
Comeff_MIA			-0.055	-0.028	-0.046	3.393
AffCommitment1				-0.174	-0.153	2.006
AffCommitment2				0.208*	0.190*	1.508
AffCommitment3				0.209	0.189	1.675
BI					-0.012	1.369
Perf_B					0.414**	4.411
Perf_M					-0.093	4.058
Goveff					-0.244*	2.527

a. Dependent variable: Perf_IA

In terms of board performance, the structural control variables Special and Formal as well as all five cultural control variables showed significant Pearson correlation coefficients with board performance and were therefore included in the regression procedure with Perf_B as the dependent variable. All regression models that were constructed were significant at least at the 0.05-level. The last three models had *p*-values equaling 0.000. The final model, comprising all predictor variables, explained more than 80 % of the variation of board performance but also the structural and cultural control variables alone accounted for almost 37 % of the variance.

Table 42: Regression model summary IX[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.274[a]	0.075	0.056	1.18158	.021[b]	
2	.642[b]	0.412	0.368	0.96674	.000[c]	
3	.806[c]	0.650	0.620	0.75007	.000[d]	
4	.910[d]	0.827	0.804	0.53815	.000[e]	2.200

a. Dependent variable: Perf_B
b. Predictors: (Constant), Special, Formal
c. Predictors: (Constant), Special, Formal, Creation, Compet, Control, Collab, Supportive_Cult
d. Predictors: (Constant), Special, Formal, Creation, Compet, Control, Collab, Supportive_Cult, Comeff_IAB
e. Predictors: (Constant), Special, Formal, Creation, Compet, Control, Collab, Supportive_Cult, Comeff_IAB, BI, Perf_IA, Perf_M, Goveff

Furthermore, several variables were significant predictors for board performance in the regression analysis, namely communication effectiveness by internal audit with the board (Comeff_IAB), internal audit performance (Perf_IA), senior management performance (Perf_M) and governance effectiveness (Goveff). All four variables were positively associated with the dependent variable, with senior management performance having the highest coefficient, followed by governance effectiveness, then communication effectiveness by internal audit with the board and finally internal audit performance. Even after repeating the analysis using 10'000 bootstrap samples, the significance levels remained relatively stable and were hence robust to violations of the parametric assumptions. Only the variable for internal audit performance was slightly above the 0.05-threshold after bootstrapping.

Table 43: Regression coefficients IX[a]

	Model 1	Model 2	Model 3	Model 4	VIF
(Constant)	3.413***	1.070	-0.361	-1.344**	
Formal	0.108	-0.077	0.007	-0.067	1.561
Special	0.245*	0.105	0.020	0.062	1.313
Collab		-0.087	-0.010	-0.024	2.004
Creation		0.288**	0.158	0.027	2.086
Control		0.221	0.117	-0.041	2.497
Compet		0.088	0.086	0.037	1.238
Supportive_Cult		0.261*	0.090	-0.015	2.995
Comeff_IAB			0.571***	0.303**	2.435
BI				0.000	1.159
Perf_IA				0.172*	1.753
Perf_M				0.449***	2.414
Goveff				0.318***	2.322

a. Dependent variable: Perf_B

In terms of senior management performance, four cultural control variables correlated significantly with senior management performance as the dependent variable and were considered in the regression analysis, indicating a strong influence of senior management for shaping the organizational culture through the *Tone at the Top*. All regression models turned out highly significant, with *p*-values smaller than 0.001. Even the structural control variable Formal alone was highly significant and yielded an adjusted R^2 of 11.2 %. As anticipated, the highest explanatory power was contributed by the cultural control variables whose inclusion resulted in a climb to 47.2 % of explained variance in the second regression model. The third regression model, which newly comprised the

variable of interest Comeff_IAM, added another 8.6 % of explained variance. Eventually, a considerable proportion of 67.7 % of the variation of senior management performance could be explained by all of the predictors in the fourth and final regression model.

Table 44: Regression model summary X[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.348[b]	0.121	0.112	1.129	.000[b]	
2	.705[c]	0.498	0.472	0.870	.000[c]	
3	.764[d]	0.584	0.558	0.796	.000[d]	
4	.840[e]	0.706	0.677	0.680	.000[e]	1.782

a. Dependent variable: Perf_M
b. Predictors: (Constant), Formal
c. Predictors: (Constant), Formal, Creation, Control, Collab, Supportive_Cult
d. Predictors: (Constant), Formal, Creation, Control, Collab, Supportive_Cult, Comeff_IAM
e. Predictors: (Constant), Formal, Creation, Control, Collab, Supportive_Cult, Comeff_IAM, Perf_IA, Perf_B, Goveff

Finally, the predictors Comeff_IAM, Perf_IA and Perf_B turned out significant in the hierarchical multiple regression analysis. Specifically, higher internal audit performance (Perf_IA) was negatively related to managerial performance (Perf_M) while communication effectiveness by internal audit with senior management (Comeff_IAM) had a positive estimate, supporting the understanding that the superior has a strong influence on the effectiveness of the communication with their subordinates as suggested by Burke and Wilcox (1969). Since the board is responsible for overseeing senior management, it was not surprising that board performance was confirmed as the strongest predictor for senior management performance.

Table 45: Regression coefficients X[a]

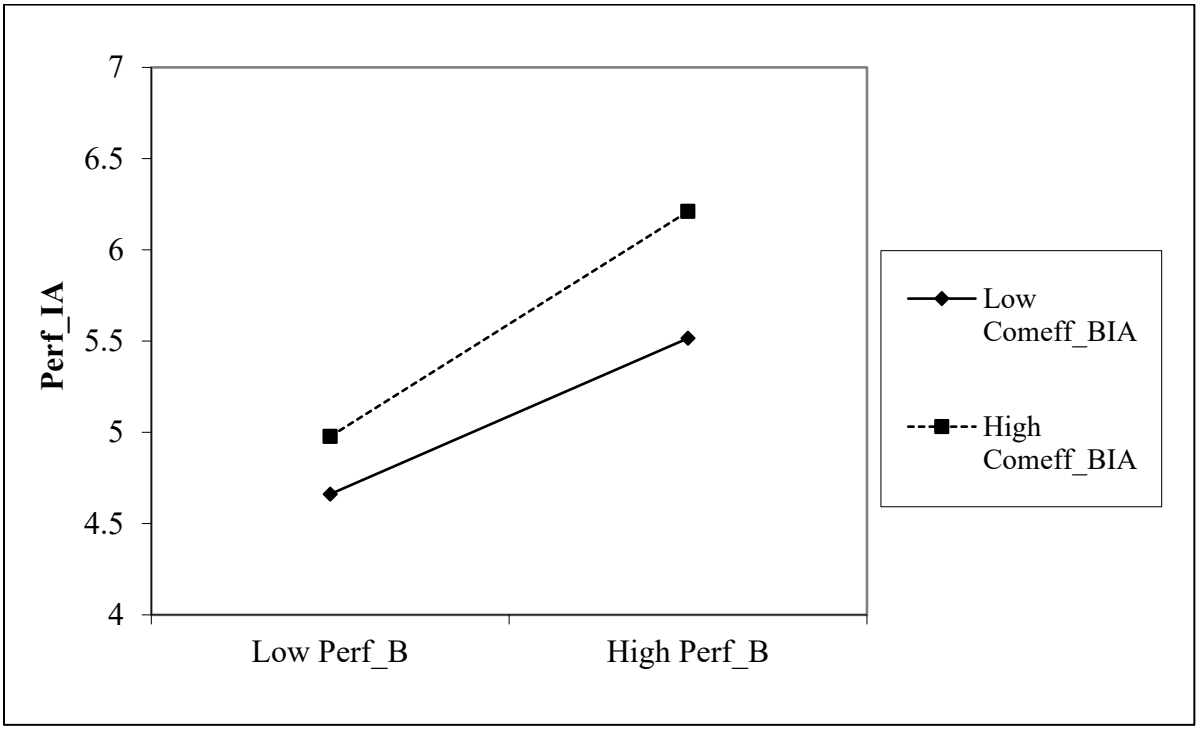
	Model 1	Model 2	Model 3	Model 4	VIF
(Constant)	3.355***	0.501	-0.460	0.178	
Formal	0.341***	0.110	0.082	0.115	1.406
Collab		-0.013	0.086	0.057	1.998
Creation		0.303**	0.219*	0.105	1.996
Control		0.224*	0.196*	0.119	2.476
Supportive_Cult		0.254*	0.080	0.085	2.992
Comeff_IAM			0.377***	0.229**	2.289
Perf_IA				-0.233*	1.762
Perf_B				0.555***	3.536
Goveff				-0.089	2.537

a. Dependent variable: Perf_M

To evaluate the hypothesized moderation effects from the eighth hypothesis, the interaction term Perf_B_Comeff_BIA was constructed through multiplication of the variables Perf_B and Comeff_BIA. The first regression model, which considered only the significant predictors for Perf_IA as well as the variable for senior management performance (Perf_M), explained almost 41 % of the variation of internal audit performance, the interaction term added another 1.3 %. With respect to the regression coefficients and their significance, it was discovered that the interaction term was close to being significant at the conventional 0.05-level. Board performance (Perf_B) was not significant anymore after the inclusion of the interaction term. This result was a first indication that the variables Perf_B and Comeff_BIA had much higher explanatory power for internal audit performance when they were analyzed in a combined manner. After performing bootstrapping, the interaction term became fully significant with a *p*-value of 0.048 and the significance of the other predictors remained approximately the same.

The interaction plot subsequently allowed visualizing how communication effectiveness reinforces the relationship between board performance and internal audit performance. Although higher board performance was always associated with higher internal audit performance irrespective of the communication effectiveness by the board, the slope of the correlation was steeper when the effectiveness of communication was high. Internal audit could thus be considered to perform better if the board performed and communicated well at the same time. The same effect was found for the reverse direction, for upward communication by internal audit to the board, whereby board performance was highest when internal audit performed well and communicated effectively.

Figure 30: Perf_B – Comeff_BIA interaction

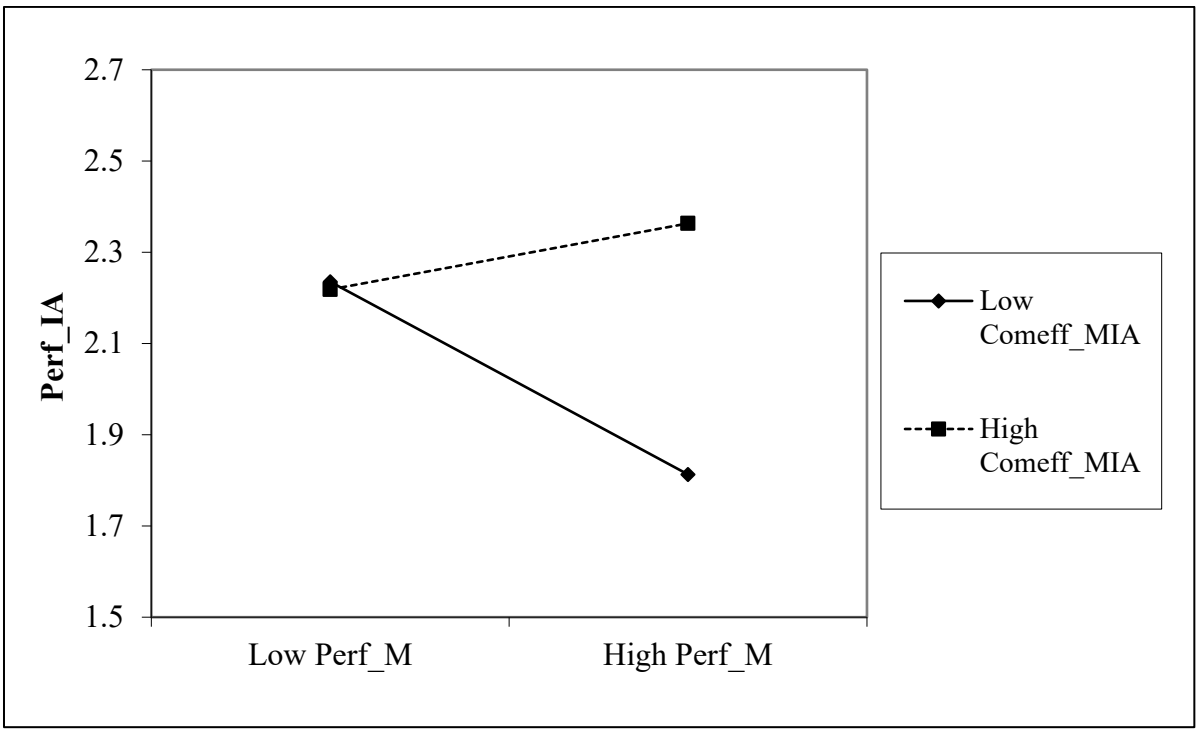


The second moderation effect that was analyzed was the interaction between the performance of senior management (Perf_M) and the communication effectiveness of senior management (Comeff_MIA) for which once again a new variable, Perf_M_Comeff_MIA, was constructed through multiplication. As expected, the two resulting regression models were highly significant and explained 39.1 % and 42.1 % of the variation of internal audit performance, respectively. All coefficients of the second regression model were significant, including the coefficient for the interaction term. The significance of all predictors could moreover be maintained after bootstrapping.

Like for the previous interaction, the interaction plot revealed that higher managerial performance was only associated with higher internal audit performance when senior management communicated effectively. When senior management performed well but communicated poorly, internal audit performance was decreased. When senior management performed poorly, differences in communication effectiveness did not considerably affect internal audit performance. Thus, it could be inferred that a high-performing senior management should communicate effectively with internal audit for internal audit to also perform well. Generally, internal audit was shown to perform best when the performance of senior management was high in combination with high communication ef-

fectiveness. The moderation effect was not confirmed for the reverse direction, for upward communication by internal audit to senior management, because the interaction term was not significant after bootstrapping.

Figure 31: Perf_M – Comeff_MIA interaction



In the following, the results of the regression analysis for governance effectiveness as the dependent variable are described. The first regression model included the structural control variables for specialization and formalization, the second model additionally comprised the cultural control variables, the third model added the variables relating to communication effectiveness (Comeff_BIA, Comeff_MIA, Comeff_IAB, Comeff_IAM) and the fourth model included the variables for internal audit performance (Perf_IA), for board performance (Perf_B) and for senior management performance (Perf_M). All four models were significant, whereby the last three models were even significant at the most restrictive 0.001-level. The fourth model, comprising the highest number of variables, explained 58 % of the variance of governance effectiveness (Goveff).

Table 46: Regression model summary XI[a]

Model	R	R^2	Adj. R^2	SE	Sig.	Durbin-Watson
1	.274[a]	0.075	0.057	1.0221	.021[b]	
2	.576[b]	0.332	0.282	0.8917	.000[c]	
3	.712[c]	0.507	0.447	0.7824	.000[d]	
4	.799[d]	0.638	0.580	0.6820	.000[e]	2.485

a. Dependent variable: Goveff
b. Predictors: (Constant), Special, Formal
c. Predictors: (Constant), Special, Formal, Creation, Compet, Control, Collab, Supportive_Cult
d. Predictors: (Constant), Special, Formal, Creation, Compet, Control, Collab, Supportive_Cult, Comeff_IAB, Comeff_BIA, Comeff_IAM, Comeff_MIA
e. Predictors: (Constant), Special, Formal, Creation, Compet, Control, Collab, Supportive_Cult, Comeff_IAB, Comeff_BIA, Comeff_IAM, Comeff_MIA, Perf_IA, Perf_B, Perf_M

In terms of the regression coefficients and their significance, board performance (Perf_B) was related significantly and with a positive coefficient of 0.516 to governance effectiveness. Internal audit performance (Perf_IA) was also significant but negatively related to the dependent variable, whereas senior management performance had a slightly positive estimate and was not significant. Of the variables relating to communication effectiveness, no variable was significant after accounting for the performance of internal audit, the board and senior management. Bootstrapping did not drastically alter the *p*-values of board performance (Perf_B) and internal audit performance (Perf_IA). Board performance could be regarded as the most important predictor for governance effectiveness. The fact that the performance of internal audit and governance effectiveness were negatively related supported the underlying assumptions of *systems theory*[47].

[47] Also refer to section 2.1.

Table 47: Regression coefficients XI[a]

	Model 1	Model 2	Model 3	Model 4	VIF
(Constant)	3.940***	2.015**	0.910	1.947**	
Formal	0.090	-0.045	0.002	0.007	1.627
Special	0.215*	0.097	0.030	0.014	1.375
Collab		-0.042	0.049	0.028	2.180
Creation		0.193*	0.063	-0.006	2.137
Control		0.305**	0.233*	0.167	2.429
Compet		0.148*	0.143*	0.105	1.231
Supportive_Cult		0.015	-0.182	-0.098	3.735
Comeff_IAB			0.476**	0.187	6.506
Comeff_IAM			-0.048	0.055	5.628
Comeff_BIA			-0.124	-0.042	3.567
Comeff_MIA			0.214	-0.009	5.039
Perf_IA				-0.248*	1.931
Perf_B				0.516**	5.036
Perf_M				0.012	4.635

a. Dependent variable: Goveff

7.1.3 Robustness and reverse causality

To assess the robustness of the unstandardized estimates and their significance, the non-significant predictors were dropped one by one for each dependent variable in the regression analysis. This kind of sensitivity analysis showed that the removal of the variables led to small changes in the unstandardized estimates but the *p*-values showed no too drastic changes. Like bootstrapping, the sensitivity analysis therefore generally supported the robustness of the results.

Since according to *systems theory* organizations can be regarded as systems of interrelated activities[48], governance-related variables often correlate with each other and the direction of the relationships is usually not clear from a theoretical point of view. Linear regression can therefore often only estimate the strength of the specific relationship, however not its direction or causality. When the relationship between two variables is bidirectional, either one variable causes a change in the other variable or the other way around. As a result, the independent variable can be related to the error term in linear regression analysis (*endogeneity*).

[48] Also refer to section 2.1.

With regard to the research phenomenon, reverse causality is very likely. Penley and Hawkins (1985) stated that "measuring interpersonal communication in organizations is difficult because of the nature of communication" and because internal communication "is a process, it is transactional, and its relationship to other organizational variables may be characterized by reciprocal causality" (p. 310; Schuler 1979). In some cases, reverse causality does not really matter, for example with respect to the *antecedents* of effective communication (hypotheses 1-5) for which the causality is already predetermined by the *theory of planned behavior*[49]. For other cases however, for instance for the relationship between internal audit performance and board performance, reverse causality must be taken into account.

A common way to manage reverse causality is through instrumental variables. Instrumental variables are exogenous variables that are theoretically associated with the independent variable but unrelated to the dependent variable. The researcher uses the instrumental variable to perform a *Two-Stage-Least-Squares* (*2SLS*) estimation isolating the causal effect of the independent variable on the dependent variable (Larcker & Rusticus, 2010). However, finding instrumental variables is extremely difficult and they might not even exist at all.

In this instance for example, variables would have to exist that theoretically affect the communication effectiveness by internal audit to the board, respectively to senior management, but not board or senior management performance. This was only approximately fulfilled for the demographic control variables that measured age, professional experience, certification and IIA membership. Only the variable for IIA membership correlated significantly with the communication effectiveness by internal audit to the board and simultaneously not with board performance. Still, IIA membership explained only 3.1 % of the variance of the effectiveness of communication by internal audit to the board, raising doubt whether the variable was strong enough to be used as an instrument for the *2SLS* estimation. Concerning senior management performance, no variable showed a significant correlation with the effectiveness of communication by internal audit to senior management and simultaneously no significant correlation with senior management performance.

[49] Also refer to section 2.4.

As a result, it was more warranted to interpret all regression results for hypotheses 6-9 (*Outcomes*) in terms of associations between the variables instead of in terms of causal relationships.

7.2 Path analysis results

In the following, the results of the path analysis are presented and compared with the results of the hierarchical multiple regression analysis.

7.2.1 Global model fit

After bootstrapping with 10'000 samples, the default model indicated a non-significant *Bollen-Stine p*-value (0.474). The bootstrap samples therefore did not significantly deviate from the original sample.

Fit indices in path analysis or structural equation modelling measure the *construct validity* of the specified measurement model. Absolute fit indices, such as the *Chi-Square* (χ^2)-statistic or the *Root Mean Square Error of Approximation (RMSEA)* assess how well the specified model fits the sample data. By contrast, incremental fit indices, including the *Normed Fit Index (NFI)* and the *Comparative Fit Index* (*CFI*), evaluate the model fit by comparing the default model to a base or independence model in which all variables are assumed to be uncorrelated. In general, for incremental indices, a cut-off value of 0.9 for accepting the model is quite common. Hair et al. (2006, p. 753) recommended the following thresholds for χ^2 , *CFI* and *RMSEA* for samples below 250 cases and less than 12 variables, which applies to the path model at hand.

Table 48: Fit indices and thresholds

χ^2	Non-significant *p*-values
CFI	0.97 or higher
RMSEA	Values < 0.08

In this case, the default model showed a very good fit to the data as the χ^2 -value was 2.744, with 2 degrees of freedom and a *p*-value of 0.254 (> 0.05). This was an indication that the null hypothesis should be maintained over the alternative hypothesis that the model was incorrect. Other conventional fit indices confirmed the strong fit. *RMSEA* was at 0.00, which falls below the generally accepted upper limit of 0.08.

In addition, *NFI* was at 0.993 and *CFI* at 0.998. Consequently, it could be concluded that the global fit of the specified path model was very satisfactory.

7.2.2 Parameter estimates

The results further showed that eight of the twelve specified paths had significant parameter estimates. Board performance was significantly associated with internal audit performance, managerial performance, effective communication between internal audit and the board and with governance effectiveness. The highest parameter estimate was attributed to the path between board performance and senior management performance. The performance of senior management was further significantly related to effective communication between internal audit and senior management but it was not significantly associated with higher governance effectiveness. Moreover, the performance of internal audit turned out as a significant positive predictor for effective communication with the board and senior management as well as a significant negative predictor for governance effectiveness. Both variables for effective communication between internal audit and the board, respectively between internal audit and senior management, were not directly significantly associated with enhanced governance effectiveness. Hence, all of the aforementioned findings confirmed the implications from the regression analysis. The only finding that could not substantiate the corresponding regression result was that internal audit performance was not significantly related to senior management performance in the path analysis. In the regression analysis, the relationship had been significant for senior management performance as the dependent variable. Nonetheless, the regression coefficient for the relationship had also been negative in the regression analysis so that at least the sign of the association was confirmed. It was additionally reinforced that both the performance of the board/senior management and the performance of internal audit were associated with higher (bilateral) communication effectiveness, underpinning that internal communication is a two-way process to which both the superior and the subordinate contribute, although the subordinate usually to a lesser extent (Burke & Wilcox, 1969).

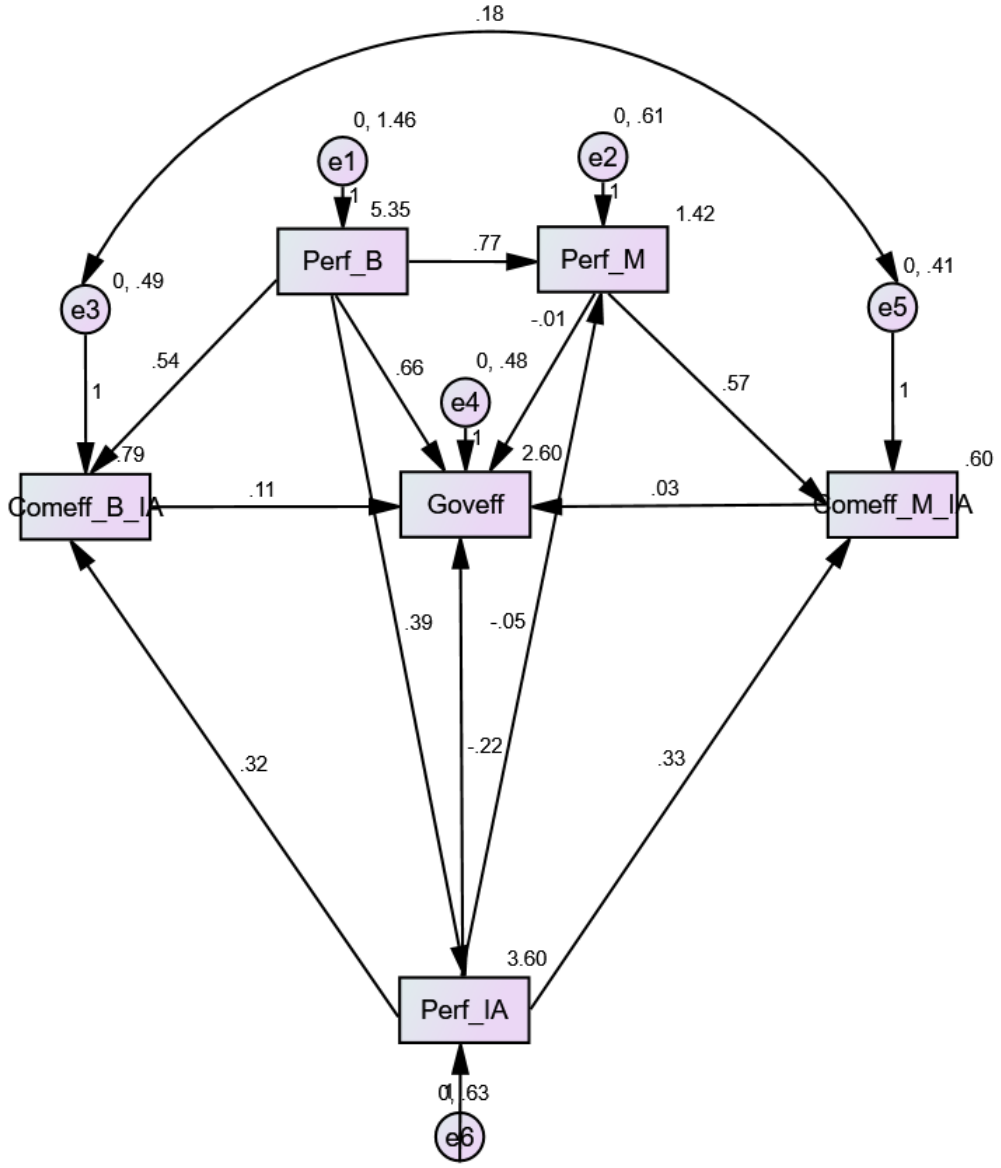
In sum, the results of the path analysis hence validated the findings of the hierarchical multiple regression analysis and strengthened the theoretical assumptions of the hypotheses.

Table 49: Parameter estimates[50]

Endogenous variable		Exogenous variable	B	SE	Critical ratio	*p*
Perf_IA	⇐	Perf_B	.387	.065	5.977	***
Perf_M	⇐	Perf_B	.766	.074	10.370	***
Perf_M	⇐	Perf_IA	-.052	.097	-.539	.590
Comeff_B_IA	⇐	Perf_B	.544	.064	8.548	***
Comeff_M_IA	⇐	Perf_IA	.335	.073	4.555	***
Comeff_M_IA	⇐	Perf_M	.573	.055	10.498	***
Comeff_B_IA	⇐	Perf_IA	.320	.086	3.719	***
Goveff	⇐	Perf_IA	-.223	.096	-2.333	.020
Goveff	⇐	Perf_M	-.005	.110	-.048	.961
Goveff	⇐	Comeff_B_IA	.112	.106	1.051	.293
Goveff	⇐	Comeff_M_IA	.029	.116	.252	.801
Goveff	⇐	Perf_B	.657	.111	5.940	***

[50] The variables Comeff_B_IA and Comeff_M_IA do not differentiate between upward and downward communication as otherwise feedback loops would have resulted that are methodologically not recommended. The two variables were constructed through averaging the variables for upward and downward communication with the board and senior management, respectively.

Figure 32: Path model and coefficients



7.3 Chapter summary

The quantitative analysis including a hierarchical multiple regression analysis and a complementary path model uncovered many noteworthy findings. The importance of internal auditors' perceived behavioral control for actually engaging in effective communication with the board was confirmed. The subjective norm was a significant predictor for internal auditors' intention to communicate effectively with senior management. The path model further suggested that internal audit, the board and senior management all contribute to effective communication, although the contribution of the board and senior management is likely higher than the contribution of internal audit (Burke & Wilcox, 1969). In addition, effective communication moderated the relationship between internal audit performance and board performance, respectively the relationship between senior management performance and internal audit performance (for effective downward communication). Hence, effective communication was particularly relevant for downward communication by senior management. Higher governance effectiveness was mostly associated with higher board performance. The detailed results are summarized in the below table. For each hypothesis, it is thereby indicated whether the hypothesis was supported or rejected.

Table 50: Summary of the quantitative results

Hypothesis	Result	Summary
H1:	*(a) Support*	(a) AttB was significant for BIB as the dependent variable.
	(b) Rejection	(b) AttM was non-significant for BIM as the dependent variable.
H2:	*(a) Rejection*	(a) SNB was non-significant for BIB as the dependent variable.
	(b) Support	(b) SNM was significant from BIM as the dependent variable.
H3:	*(a) Rejection*	(a) PBCB was non-significant for BIB as the dependent variable.
	(b) Rejection	(b) PBCM was non-significant for BIM as the dependent variable.
H4:	*(a) Rejection*	(a) BIB was non-significant for Comeff_IAB as the dependent variable.
	(b) Rejection	(b) BIM was non-significant for Comeff_IAM as the dependent variable.
H5:	*(a) Support*	(a) PBCB was significant for Comeff_IAB as the dependent variable.

	(b) Rejection	(b) PBCM was non-significant for Comeff_IAM as the dependent variable.
Summary of the results RQ2 – Antecedents		The theoretical implications of the *theory of planned behavior* were partly confirmed. Especially the predictive power of the variables AttB for the intention to communicate effectively with the board, SNM for the intention to communicate effectively with senior management and PBCB for effective communication with the board was supported.
H6a:	*Rejection*	Neither the effectiveness of downward communication by the board (Comeff_BIA) nor the effectiveness of downward communication by senior management (Comeff_MIA) was significantly related to any of the three measures for affective commitment.
H6b:	*Partial support*	The second subscale of the affective commitment construct was significantly related to internal audit performance. However, since effective downward communication by the board and senior management showed no significant relationship with the second subscale (see H6a), affective commitment did not mediate the relationship between effective downward communication and internal audit performance.
H7:	*Partial support*	Effective communication between internal audit and the board was – in both directions – significantly associated with higher board and internal audit performance. Effective upward communication to senior management was related to higher senior management performance, yet effective downward communication by senior management to internal audit was not significantly connected to higher internal audit performance in the regression analysis per se – i.e. without moderation (see H8). It should be noted that although different constructs were used for upward and downward communication, the possibility of reverse causality – in the sense that the board and senior management may also influence the effectiveness of upward communication by internal audit – could not be fully excluded (Burke & Wilcox, 1969).
H8:	*Partial support*	Effective communication moderated the relationship between internal audit performance and board performance in both directions, respectively senior management performance in the downward direction. Effective downward communication from the

		board and senior management in combination with high performance of the board and senior management hence benefitted the performance of internal audit greatly.
H9:	*Partial support*	The performance of the board was significantly and positively related with governance effectiveness, whereas the performance of internal audit was significantly and negatively related with governance effectiveness and the performance of senior management was non-significant with a coefficient close to zero. If internal audit communicated effectively to the board and simultaneously performed well, it might be that the effectiveness of governance was at least slightly promoted through increased board performance. However, causal inferences should be made with caution due to the likelihood of reverse causality between the governance variables.
Summary of the results for RQ3 – Outcomes		Except for hypothesis 6a, all theoretically anticipated relationships regarding the third research question were at least partially supported. Effective communication was in both directions significantly linked to higher board and internal audit performance. Furthermore, effective communication also moderated the relationship between internal audit and board performance for both directions and between internal audit and senior management performance for the downward direction. Higher board performance was associated with higher governance effectiveness so that effective communication from a high-performing internal audit to the board might indirectly support effective governance through higher board performance.

8 Qualitative results

This chapter describes the results of the qualitative analysis for each research question, beginning with the *constituents* (RQ1), followed by the *antecedents* (RQ2) and concluding with the *outcomes* (RQ3) of effective communication. The results are presented according to the logic of the three coding phases, which were previously explained in section 5.7.3.

8.1 Results for RQ1 (Constituents)

To evaluate the first research question, the respondents were asked what they would generally associate with effective communication between internal audit and the board and senior management. They were encouraged to reply in an associative and unbiased manner. The following table provides four illustrative examples with raw data for how the respondents answered the first research question.

Table 51: Qualitative excerpts for RQ1

Case	Excerpt
16	"Effective communication means to bring the right topics at the right time to the attention of the board, therefore the following are critical: First, the choice of topics (whether it is risk, or non-compliance, or other topics) and second, the relevance of the topic. Also, the board should be given enough time in advance to review the content of the communication/presentation."
43	"Effective communication bases on mutual trust. To be effective, communication also needs to be open, candid and frequent. Most importantly, effective communication must rely on a common understanding of values and definitions. For this reason, it is important that the internal audit function regularly provides the board with training sessions."
50	"Effective communication involves that internal audit should have meetings with the board/audit committee in private, without senior management in the room and also private meetings with each member so that they feel comfortable in asking specific questions. […] The board/audit committee should be clear in explaining what they want internal audit to report them."
113	"Effective communication should include the audit plan and resources, changes to the plan, outcomes of the audits and other activities of internal audit are reported to the board and management written and verbally on a quarterly basis. Outcomes are taken seriously and acted upon. Internal audit has unrestricted access to the board and the Chair of the Board is very accessible for internal audit."

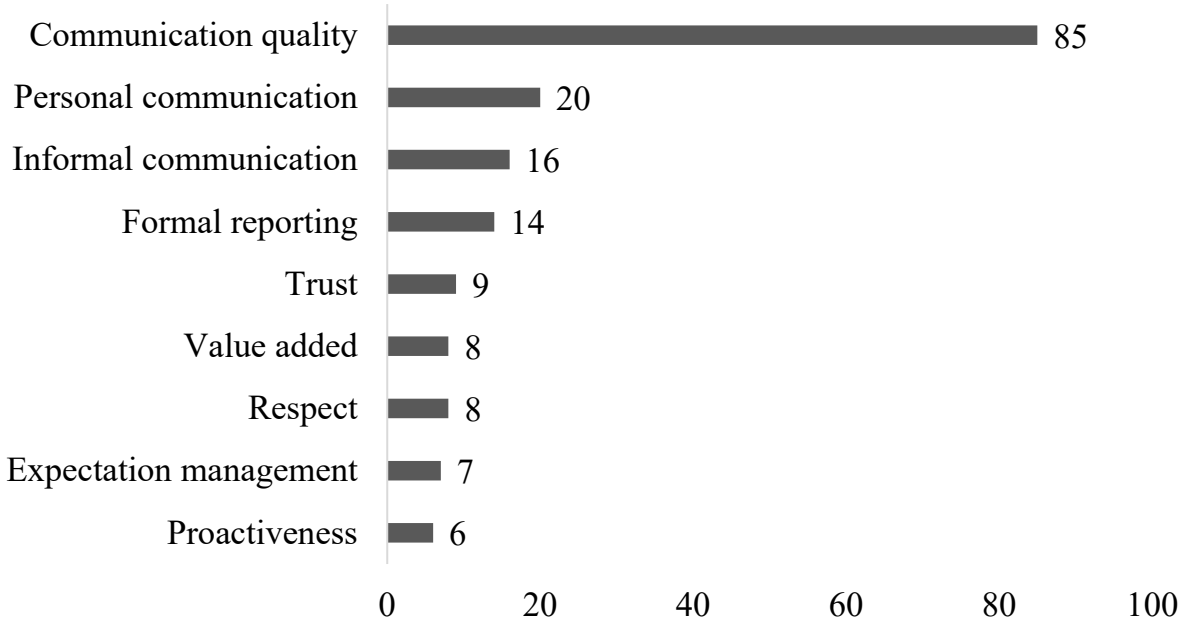
From these examples it could already be inferred how differently effective communication was understood by the respondents. It became moreover evident that the responses were sincere and transparent.

After applying the coding process previously described, 27 different indicators were identified in the *open coding* phase. The results clearly showed that the majority of the respondents associated communication effectiveness with communication quality, which was coded 85 times. Relative to the final sample of 113 respondents, this represented a proportion of 75.22 % so that three out of four respondents considered communication quality as the main *constituent* of effective communication. The respondents specifically referred to quality criteria such as timeliness, conciseness, clarity or constructiveness that are also outlined in IIA Standard 2420 – *Quality of Communications*. After communication quality, the second most frequently mentioned indicator was "personal communication" with 20 mentions. The respondents stated that they preferred communication to be "face-to-face" or "one-on-one", suggesting a desire for personal exchange at eye level. The respondents moreover highlighted the necessity for a combination of "informal communication", which was mentioned 16 times and "formal reporting", which was emphasized 14 times. Nine respondents associated effective communication with "trust", implying that effective communication should be "based on a culture of mutual trust" and that a "foundation of trust is required to establish effective communication". More than five respondents also mentioned the indicators "value added", "respect", "expectation management" and "proactiveness". With regard to the indicator "expectation management", the respondents conveyed that a regular exchange of expectations is paramount because there needs to be "agreement about the role and responsibilities of the audit department and […] no expectation gaps". Good expectation management was considered as an integral part of the responsibility of the board members who must "be clear in explaining what they want internal audit to report them" as otherwise "it is a guessing game". Another respondent specified that expectations "must be communicated clearly by the board and senior management and the CAE must communicate clearly any restrictions or limitations that might compromise the effectiveness of the internal audit activity".

The impression was conveyed that for communication between internal audit and the board and senior management to be effective, it has to comply with the IIA quality cri-

teria and moreover add value for the involved parties, be characterized by trust and respect as well as occur regularly, personally and proactively on the foundation of good expectation management. An overview of the indicators that were coded at least five times, sorted by the quantity of mentions, is presented in the figure below.

Figure 33: Most important indicators for RQ1



The in-vivo indicators were further evaluated through *axial* and *selective coding*. Initially, the indicators were condensed into first-order concepts by linking certain indicators and establishing theoretical connections. Afterwards, the first-order concepts were aggregated into second-order concepts, whereby the level of abstraction was raised. The final second-order concepts, which were obtained for the first research question, were "message-related aspects", "channel-related aspects", "relational aspects", "internal-audit related aspects", "board and senior management-related aspects" and "organizational aspects". The communication models by Shannon and Weaver (1949), Schramm (1954) and Berlo (1960)[51] were clearly reflected in these second-order concepts. Overall, it became evident that the communication channel as well as relational aspects such as trust, respect, expectation management, inclusion, support, openness and challenge were important *constituents* of effective communication, besides communication quality as a predominantly message-related aspect. An overview of the relationships between indicators, first-order concepts and second-order concepts is shown in the following.

[51] Also refer to section 4.2.

Table 52: Overview of indicators and mapped concepts for RQ1

Remaining indicators	First-order concepts	Second-order-concepts
---	Communication quality	Message-related aspects
Participation in meetings	Personal communication	Channel-related aspects
---	Informal communication	
Reporting line; Independence	Formal reporting	
Feedback	Two-way communication	
---	Trust	Relational aspects
---	Respect	
Clear roles; Common understanding	Expectation management	
---	Inclusion	
---	Support	
---	Openness	
---	Challenge	
---	Value added	Internal audit-related aspects
---	Strategic involvement	
Understanding the internal audit mandate	Perception of internal audit	Board and senior management-related aspects
Time	Availability and accessibility	
---	Company culture	Organizational aspects

8.2 Results for RQ2 (Antecedents)

The second open question provided more in-depth insights into the driving factors that might propel the effectiveness of communication between internal audit and the board and senior management. The following text excerpts exemplify how multidimensional and dense the responses were.

Table 53: Qualitative excerpts for RQ2

Case	Excerpt
61	Antecedents "are subordination to the audit committee, company strategy focused on innovation, open-minded mentality, big size of the company", while barriers include "subordination to the CFO, company strategy focused on cost cutting, traditional organization with traditional values and a conservative mentality."

65	Antecedents are the "culture of the company, management principles, audit charter, organization of reporting lines, communication (soft-)skills, nearness of offices to Senior Management and other key stakeholders, technology."
87	Antecedents are "listening skills, the ability to understand needs, to assess the situation and think of creative and out-of-the-box solutions", whereas barriers are considered "stubbornness, not being open to new/other ideas, the lack of ability to structure an argument in a logical and convincing manner".
112	Antecedents "are independence of internal audit through functional reporting to the board or in our case the audit committee, unrestricted access to the board or the Chair of the Board also outside of board meetings, focus on and knowledge of risk management and internal control by the board and senior management, qualification of internal auditors, objectivity, professionalism and being able to write constructive, objective and timely audit reports to auditees and also to the board and senior management".

The qualitative results also revealed several structural and relational barriers to effective communication regarding which the respondents pointed out that the absence of these barriers means that the effectiveness of communication is supported.

Examples of structural barriers that were mentioned by the respondents included:

- "Paper/phone meetings";
- "Too much formal communication";
- "Lack of independence from senior management";
- "No staffing";
- "Communication only through email without clarification to make sure that everything is understood correctly";
- "Cost awareness, geographical distance";
- "Coordination between senior management and internal audit is not sufficiently mandated and aligned due to the direct reporting line with the board";
- "Multiple alignment meetings within management and senior management before the results are ultimately presented to the audit committee".

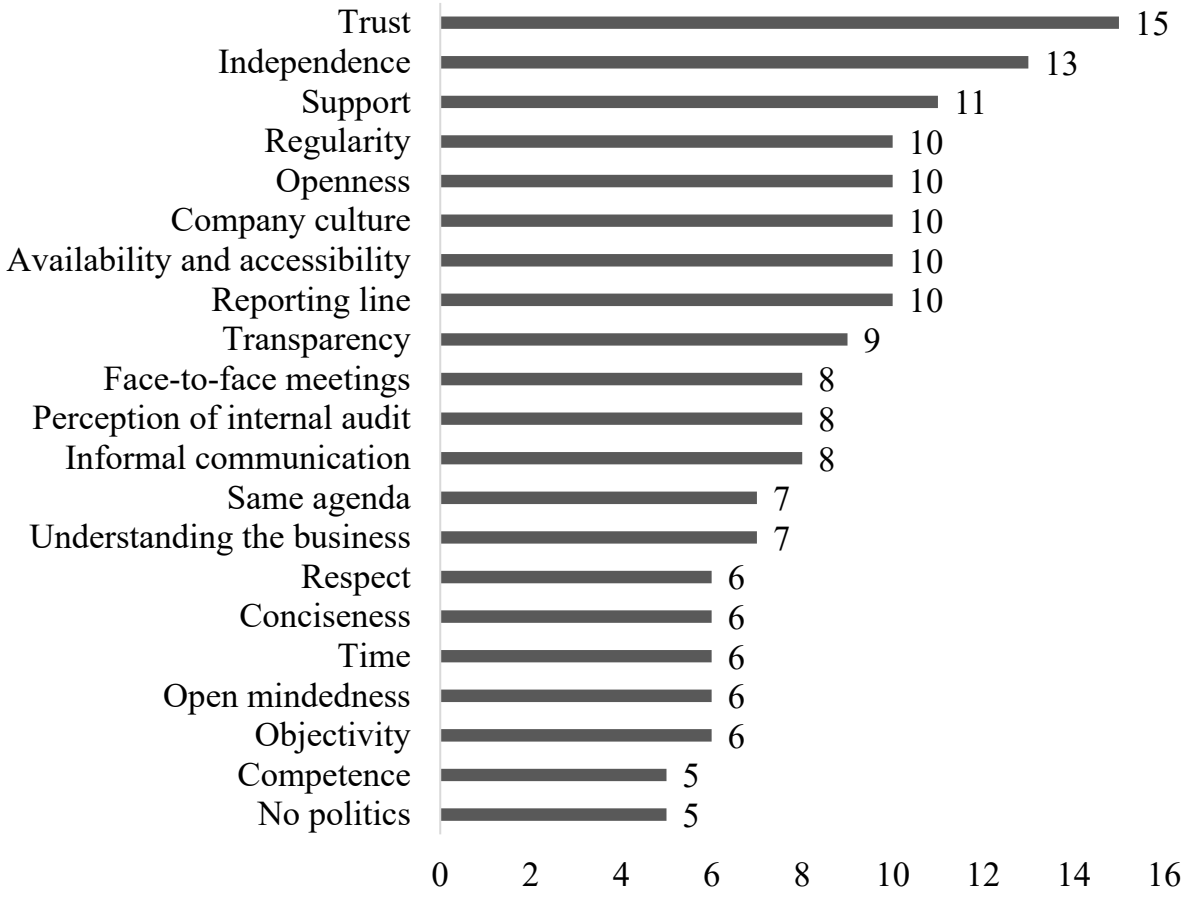
The respondents additionally emphasized several relational barriers, including:

- "Lack of support by the board";

- “The board does not take advantage of the internal auditor”;
- “Lack of awareness of senior management regarding the added value of internal audit”;
- “Lack of support by top management”;
- “Personal career interests”
- “Hidden messages, behind-the-back discussions, omitting relevant information”;
- “Hidden agendas among the 1st, 2nd and 3rd Line of Defense”;
- “Emotions, fear of audit findings, auditors behaving as school masters or best-in-class, resistance to changes”.

In total, 87 in-vivo indicators were identified in the *open coding* phase. Compared to the first research question, the diversity of the responses was even higher. The most frequently mentioned indicator was “trust”, which was coded 15 times. “Independence” was coded 13 times, “support” 11 times, “regularity”, “openness”, “company culture”, “availability and accessibility” and “reporting line” were coded 10 times, respectively. In addition, the following indicators were coded five times or more: “transparency” (9 times), “face-to-face meetings” (8 times), “perception of internal audit” (8 times), “informal communication” (8 times), “same agenda” (7 times), “understanding the business” (7 times), “respect” (6 times), “conciseness” (6 times), “time” (6 times), “open mindedness” (6 times), “objectivity” (6 times), “competence” (5 times) and “no politics” (5 times). An overview of the indicators that were coded at least five times is once again provided in the following.

Figure 34: Most important indicators for RQ2



Even after the *open coding* phase, it could already be recognized that there appeared to be a concentration on more personal, social and relational factors like trust that antecede effective communication. This preliminary implication supported the opinion of Penley and Hawkins (1985) who stressed that "interpersonal communication between supervisor and subordinate is both relational and content-oriented" (p. 324). The relevance of trust was further not surprising because it corresponded with the currently ongoing discussion about the perception of internal audit as a *Trusted Advisor* for its key stakeholders. In addition, organizational factors like the independence of internal audit or the right company culture also seemed to play an important role for effective communication. Communication quality criteria were still mentioned but were understandably less at the forefront relative to the first research question.

The in-vivo indicators were reduced to first-order concepts through establishing theoretical links and subsequently further summarized into second-order concepts. The communication models by Shannon and Weaver (1949), Schramm (1954) and Berlo (1960)

were once again partially represented in the second-order concepts, which were “factors related to the board and to senior management only”, “factors related to internal audit only”, “factors related to the board, senior management and internal audit”, “message-related factors”, “channel-related factors”, “relational factors” as well as “organizational factors”. The second-order concepts “factors related to the board, senior management and internal audit” and “relational factors” had the highest number of corresponding first-order concepts. It became evident that the board, senior management and internal audit should have the right attitude, adequate expertise, good communication skills, professional experience, and simultaneously engage in a good working relationship, steady professionalism and continuous expectation management. Concerning the “factors related to the board and to senior management only”, the respondents considered the availability and accessibility of the board as a very critical precondition for communicating effectively with the board members. For that reason, lack of time, insufficient scheduling or lack of physical proximity, the latter of which influences the choice of the communication channel, should not be underestimated as crucial success factors to achieve effective communication. An overview of the indicators, first-order concepts and second-order concepts for the second research question is provided in the subsequent table.

Table 54: Overview of indicators and mapped concepts for RQ2

Remaining indicators	First-order concepts	Second-order concepts
Time; scheduling; physical proximity	Availability and accessibility	Factors related to the board and to senior management only
---	Targets for senior management to remediate findings	
Continuous auditing; audit charter; alignment of strategy and audit plan	Value added of internal audit	Factors related to internal audit only
Objectivity; confidence; decisiveness; open mindedness; no "legal" mindset and total risk avoidance; personal ethics	Attitude	Factors related to the board, senior management and internal audit
Training; qualification; education; business acumen	Expertise	
Listening skills; logical argumentation; being convincing; communication style; language skills	Communication skills	
Industry experience; understanding the business; personal background	Experience	
Regularity; conciseness; timeliness; constructiveness; completeness	Communication quality	Message-related factors
Formal reporting	Reporting line	Channel-related factors
Small circle; informal communication; direct communication; face-to-face communication; two-way communication	Communication type	
Trust; support; transparency; openness; honesty; perception of internal audit; understanding the internal audit mandate; empathy; inclusion; appreciation	Good working relationship	Relational factors
Respect; fairness; no politics; accountability; acceptance of findings; critical thinking; emotional control; right attitude	Professionalism	
Common understanding; agreement regarding the goal and purpose of internal audit; same priorities; same agenda; coordination; clear roles	Expectation management	
Tone at the top; shared values; innovation focus	Company culture	Organizational factors
Regulation; flat hierarchies; organization of the board (independence); mature and routine communication process; resources	Structure, processes and resources	

8.3 Results for RQ3 (Outcomes)

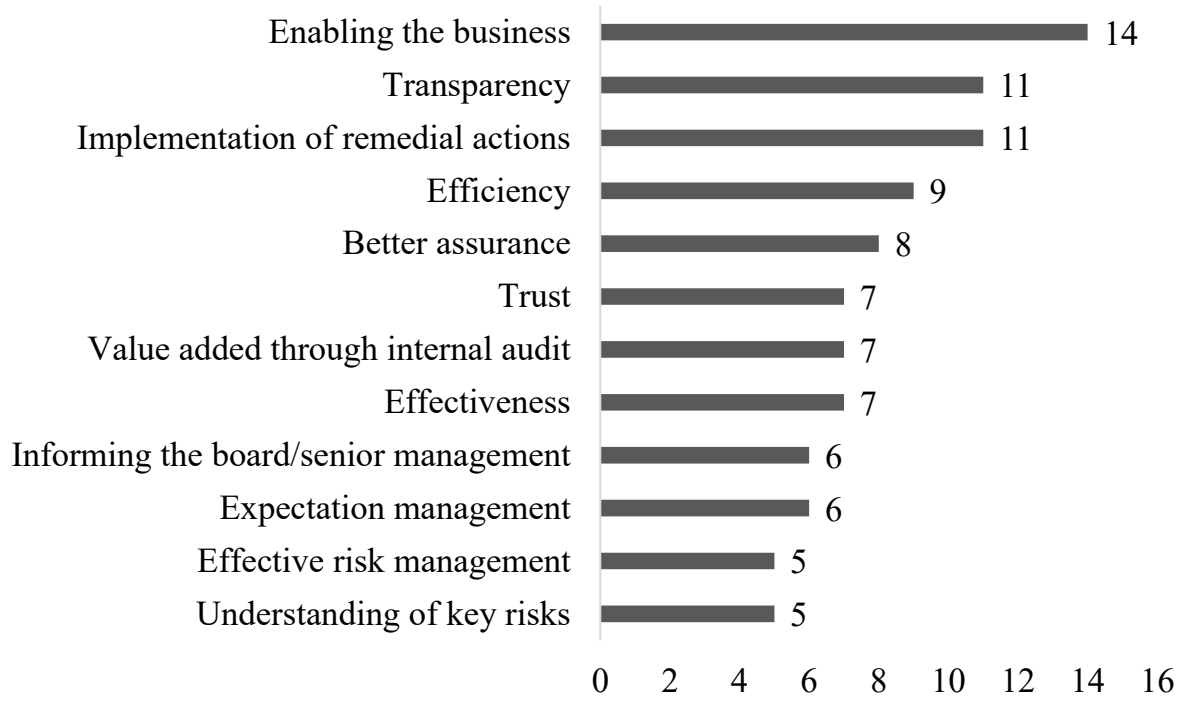
With regard to the third research question regarding the *outcomes* of effective communication, the following table shows once again several excerpts from different cases to familiarize the reader with the responses.

Table 55: Qualitative excerpts for RQ3

Case	Excerpt
15	"The main outcomes are: 1. Effective risk anticipation and management; 2. Timely handling of non-compliance issues; 3. Improved assessment of strategic issues."
44	"Organizational growth, reassurance to the company and the auditees, alliance and support to keep the best interest of the company and its employees in mind."
59	"Effective communication helps to draw conclusions from audit findings and understand root causes, which eventually supports and helps improve the corporate culture with regard to risk awareness and controls."
63	"Alignment between the status of audits and upcoming activities, reducing conflicts and the need for negotiation, joint effort to identify areas of risk within the organization and improve the internal control environment."
104	"Main outcomes are resources for the implementation of improvements, less business risks, effective and efficient business processes."
112	"The main outcomes for the board and senior management are that they are sufficiently informed about the effectiveness of governance, risk management and internal control, and the improvements required in these areas in order to make sure the organization accomplishes its objectives."

The qualitative data were subsequently also analyzed by applying *open coding*, *axial coding* and *selective coding* in a sequential manner. In the *open coding* phase, 90 in-vivo indicators were identified. The very high number of in-vivo indicators conveyed the impression that the individual perceptions of communication outcomes were once again quite diverse. The most frequently stated indicator was "enabling the business", which was understood by the respondents as the "actions that further improve the organization and help it to achieve its goals" or as the "actions how we can make our organization better". Similarly, the indicators "implementation of remedial actions" (11 times), "efficiency" (9 times), "better assurance" (8 times), "value added through internal audit" (7 times) or "effectiveness" (7 times) likewise suggested that effective communication must be associated with value in some form.

Figure 35: Most important indicators for RQ3



In the subsequent *axial coding* phase, many similarities between the in-vivo indicators could be identified, such as between "enabling the business" and "achievement of objectives". Such similar indicators were subsumed under the indicator – now first-order concept – that was mentioned more often. The first-order concepts were then summarized in following second-order concepts: "outcomes related to the board and to senior management", "outcomes related to internal audit", "outcomes related to the working relationship" and "outcomes related to the organization". The second-order concepts suggested that the respondents did not only identify positive *outcomes* of effective communication for internal audit but also for its key stakeholders as well as for the entire organization. In terms of the outcomes for internal audit, the responses suggested for example that effective communication led to a higher value added of internal audit, a more positive perception, better business acumen, sufficient resources and better talent development. The full overview is yet again presented in the following table.

Table 56: Overview of indicators and mapped concepts for RQ3

Remaining indicators	First-order concepts	Second-order concepts
Understanding of information needs; Prioritization of issues; improved assessment of strategic issues; better conclusions; better decisions	Information of the board and senior management	Outcomes related to the board and to senior management
Understanding of root causes	Understanding the business	
Understanding internal audit concerns	Sharing concerns	
Focus on remediation	Implementation of remedial actions	
---	Better tone at the top	
Effectiveness; better assurance; better conclusions; agility; audit quality; audit report quality	Value added of internal audit	Outcomes related to internal audit
Alignment with strategy; consensus on the audit plan	Appropriateness of audit plan	
Better integration in the organization; trusted partner	Perception of internal audit	
Understanding of root causes	Understanding the business/tasks	
---	Sufficient resources	
---	Talent development	
Transparency; openness; trust; expectation management; common understanding; clear goals and responsibilities; coordination; acceptance; confidence; constructiveness; mutual benefit/win-win; appreciation; deeper connection; full cooperation; networking; no prejudice	Good working relationship	Outcomes related to the working relationship
Good results; efficiency; effectiveness; learning organization; reduction of mistakes; change	Achievement of objectives	Outcomes related to the organization
Focus on governance; effective risk management and internal controls: [understanding key risks; minimization/reduction of risks/better risk prevention; risk focus/covering top risks/exploration of new risks; better determination of risk appetite; appropriate risk evaluation; good risk response; effective measures; no crises; monitoring; compliance; less frauds; awareness for important controls; company culture; less politics]	Good governance	

8.4 Chapter summary

This chapter was concerned with illustrating the results and implications from the qualitative analysis. The richness of detail underscored that the respondents provided very authentic and unbiased insights from their practical experiences. With respect to the first research question, the content analysis suggested that the quality criteria put forward in IIA Standard 2420 – *Quality of Communications* do apply as *constituents* of effective communication. Especially adjectives such as "timely", "concise", "correct" and "constructive" were frequently associated with effective communication with the board and senior management. Besides, personal and informal communication were also important determinants. Concerning the second research question, trust, good communication skills, professional experience as well as availability and accessibility of the board and the subjective value added of internal audit were identified as relevant *antecedents* of effective communication. Ultimately, with respect to the *outcomes* of effective communication, the respondents underlined that effective communication does in fact create significant value – for the board and senior management, for internal audit, for the working relationship and even for the organization as such. Higher effectiveness of risk management was pointed out as a central positive organizational outcome, whereby risk management is an integral part of corporate governance. Thus, the complementary qualitative analysis contributed more in-depth ideas regarding the specific areas in which effective communication can add value to the organization.

9 Conclusion

The last chapter is the conclusion for the three research questions and includes an overall summary and discussion, an outline of the theoretical and practical contributions, the limitations of the thesis and finally an outlook for future research.

9.1 Overall summary and discussion

In this section, the results from the quantitative and qualitative analyses are summarized, connected and discussed. With regard to the quantitative analysis, the hypotheses from section 5.1 were either supported, partially supported or rejected. A detailed summary was presented previously[52]. Conversely, the qualitative analysis, in which second-order concepts for each research question were derived after applying *open*, *axial* and *selective coding*, highlighted the multitude, the diversity and the complexity of the aspects that either constitute, antecede or result from effective communication between internal audit and the board and senior management. In general, the results corroborated that effective communication is considerably influenced through structural, cultural, relational and individual factors, and in turn unlocks many possibilities for maintaining and creating organizational value. The most important findings will be summarized according to the logic of the three research questions – RQ1 – *Constituents*, RQ2 – *Antecedents* and RQ3 – *Outcomes* of effective communication – for both the quantitative and the qualitative analysis.

9.1.1 Summary and discussion of RQ1 (Constituents)

In terms of the *constituents* of effective communication, the respondents pointed to the relevance of communication quality, which the sender and the receiver of the information – in this case internal audit, the board and senior management – can directly influence. Therefore, the attributes that are reflected in IIA Standard 2420 – *Quality of Communications* – accuracy, objectivity, clarity, conciseness, constructiveness, completeness and timeliness – turned out as being significant *constituents*, confirming the validity of the IIA Standard. Many survey respondents stated for example that effective

[52] Also refer to section 7.3.

communication must in their eyes be “accurate, timely, risk-based, to the point”, “objective, transparent, in time”, “short, sharp, clear”, “transparent, constructive, timely”, that it must comprise “timely insights and conclusions” as well as “clear, concise messages addressing relevant issues in a timely manner that require taking action within a reasonable timeframe” or that it must provide “clear and quick answers to open questions and matters”.

Notwithstanding, the quality criteria proposed in IIA Standard 2420 were prioritized differently for communication by internal audit, the board and senior management. For communication initiated by internal audit, objectivity was regarded as the most important criterion. This result was not surprising because objectivity is, besides independence, according to IIA Standard 1120 – *Individual Objectivity* and the *Code of Ethics*, one of the most central attributes of an internal auditor. The requirement that internal auditors must be impartial, unbiased and refrain from any conflict of interest hence directly reflects in the *constituents* of effective communication by internal audit. For communication by the board, clarity was an even more relevant quality criterion than objectivity. This corresponded with the previously mentioned relevance of expectation management, implying that the board must know what it expects from internal audit and unambiguously communicate these expectations. For communication by senior management, timeliness was viewed as the most critical communication quality criterion, which makes sense considering that the majority of the respondents had an administrative reporting line to senior management. Since administrative communication revolves more around operational issues and day-to-day tasks, timely communication is understandably very important.

Further *constituents* of effective communication were certain attributes of the communication channel and a professional working relationship between internal audit, the board and senior management. With regard to the communication channel, the respondents appreciated the formal exchange but simultaneously also showed a considerable desire also for informal communication that occurs on a more ad hoc and spontaneous basis. Whereas for communication with the board, formal communication was preferred, the respondents generally favored informal communication with senior management. Once again, this finding reflected the fact that the majority of the responding internal auditors reported functionally to the board and administratively to senior management. Since senior management is ultimately accountable for the *First* and *Second Line of*

Defense and thus closer to the daily business, informal communication with senior management allows for a more immediate and target-oriented discussion of urgent issues. Irrespective of whether the communication happens formally or informally, the respondents clearly underlined the relevance of personal exchange. Specifically, they preferred face-to-face communication in small groups with the board and individual face-to-face communication with senior management. For this reason, it could be confirmed that communication channels requiring higher levels of personal interaction are associated with higher communication effectiveness[53].

On average, the survey respondents were rather satisfied than dissatisfied with the communication with the board and senior management. They also considered the communication with their key stakeholders rather as more effective than ineffective. Notwithstanding, the range of the perceptions in the responses was very high so that there were still many respondents identifying great room for improvement. For example, it was criticized that there was "very often a one-way communication from the board to internal audit", which underpins the necessity of regular feedback as highlighted in the communication model by Schramm (1954)[54]. Besides, the perception of internal audit as an "unavoidable burden", as one respondent stated, and the failure of the key stakeholders to view internal audit as a value adding business partner were mentioned as indications of currently ineffective communication practices in some organizations.

9.1.2 Summary and discussion of RQ2 (Antecedents)

With respect to the *antecedents* of effective communication, the results differed slightly between the board and senior management. For the board, the perceived behavioral control of internal auditors was found to be the main predictor for effective communication with the board, whereby perceived behavioral control was operationalized in terms of the confidence to communicate effectively with the board as well as the control over the communication process and its outcome. This result could suggest that when the communication process with the board is perceived as easy and collaborative, internal auditors more likely engage in effective communication. With regard to effective communication with senior management, the subjective norm was the most significant *antecedent* for internal audit's behavioral intention. However, the extent to which the organizational

[53] Also refer to section 4.3.
[54] Also refer to section 4.2.

culture supported the mandate of internal audit was eventually even more significant for predicting effective communication than the subjective norm or the behavioral intention. In general, the behavioral intention of internal auditors to communicate effectively with the board and senior management was always relatively high. The reason for this might be that internal auditors are more intrinsically motivated than members of other professions are. Consequently, the behavioral intention of the respondents had no significant influence on how effective their upward communication was, which contradicted the *theory of planned behavior*[55].

During the qualitative analysis, further *antecedents* were pointed out by the respondents that included trust, support, regularity, openness, the right company culture as well as the availability and accessibility of the board and perhaps also of senior management. The survey respondents underlined the pivotal role of trust several times by stating that effective communication "is mainly about trust" or that trust is important "so that no negative consequences arise if problematic points are addressed". It was specifically emphasized that central *antecedents* of effective communication were an "absolute focus on strategic partnership" and the perception of internal audit as an "assurance provider, problem solver, insight generator and trusted advisor". The majority of the respondents however agreed that building a personal relationship based on mutual trust "takes time" and can be difficult to achieve.

The fact that trust was regarded as extremely important for effective communication reinforced the understanding of Glauser (1984) who put forward that "trust develops via communication, and frequency and accuracy of communication is a byproduct of trust" (p. 622). Assuming a similar stance, Roberts and O'Reilly (1974b) elicited that "interpersonal trust seems to be an important antecedent to the openness and accuracy with which people, including superiors and subordinates, interact" (p. 212).

To conclude, trustful working relationships are indispensable for internal audit because its unique organizational embedding and high interdependence with the board and senior management makes internal auditors very vulnerable if they lack the necessary support and input from its key stakeholders.

[55] Also refer to section 2.4.

Besides, several structural and relational barriers were found to affect the effectiveness of communication in practice. Important structural barriers that were mentioned comprised for example too much formal communication, reliance on email communication due to geographical distance, lack of independence from management, lack of alignment between the two key stakeholders or insufficient of resources. The respondents moreover identified a lack of stakeholder support or their failure to perceive the value of internal audit, emotional reactivity to findings, lack of transparency/openness, the absence of a trustful working relationship or personal career aspirations of internal auditors as considerable relational barriers to effective communication. Thus, the structural and relational barriers, which were preliminarily discussed in section 4.6, were generally found to apply against the background of the research phenomenon. The absence of these barriers was equal to the presence of *antecedents* of effective communication.

Overall, the quantitative and qualitative insights pointed to a multitude of the possible *antecedents* for effective communication with the board and senior management, attesting to the complexity of the research phenomenon and its underlying influencing factors. It could be recognized as a conclusion that certain critical conditions for effective communication must be present, foremost a good working relationship between internal audit and its key stakeholders, high perceived behavioral control for communication with the board, a supportive culture for communication with senior management as well as the absence of the aforementioned structural and personal barriers.

9.1.3 Summary and discussion of RQ3 (Outcomes)

Concerning the *outcomes* of effective communication, effective downward communication could not be confirmed to increase internal auditors' affective commitment but the IIA membership of the employer organization was positively related to the second subscale of affective commitment, which captured the degree to which internal auditors are emotionally attached to their mandate. Hence, it could be inferred that internal auditors' affective commitment is rather intrinsic and not significantly affected by external factors. In addition, the results showed that internal audit performance was significantly higher when the board performed well and communicated effectively at the same time (and vice versa). The same held true when senior management performed well and communicated effectively to internal audit. As theoretically anticipated, the effectiveness of corporate governance was primarily influenced by the performance of the board, which

underlined once again that the board bears the main accountability for effective governance and for organizational value creation (Huse, 2007). Internal audit performance was moreover negatively associated with governance effectiveness, supporting the perspective of *systems theory* according to which the board and internal audit complement each other. If effective communication has a direct influence on corporate governance, it is most likely through internal audit performing well and communicating effectively with the board, which in turn probably promotes higher board performance. Nonetheless, since high-performing board members and senior managers can help to increase internal audit's performance if they communicate effectively, internal audit might also indirectly contribute to effective governance through better assurance of the risk management and internal control systems.

The qualitative responses confirmed that effective communication was related to higher effectiveness of risk management as one of the main elements of corporate governance. Previous researchers stressed the importance of "the use of internal audit and a commitment to strong risk management (Goodwin-Stewart & Kent, 2006, p. 95). Sarens (2009) pointed out that "the IAF can have a positive impact on the quality of risk management and internal control processes, two important aspects of corporate governance" (p. 4). Other scholars found that "risk assessment is a key function of internal audit", that "internal auditors' focus on acute shortcomings in the risk management system creates opportunities to demonstrate their value" or that internal audit "adds value through improving the control and monitoring environment within organizations to detect and self-report fraud" (Nagy & Cenker, 2002, p. 136; Sarens & De Beelde, 2006b, p. 63; Coram et al., 2008, p. 543). Also the IIA Practice Guide *Measuring Internal Audit Efficiency and Effectiveness* (2010) acknowledged that "organizations that effectively use internal auditing are better able to identify business risks and process and system inefficiencies, take appropriate corrective action, and ultimately support continuous improvement" (p. 1). Thus, effective communication can have a substantial benefit for the organization and for the value added of internal audit through the improvement of risk management.

Further *outcomes* that were identified during the qualitative analysis pertained directly to the value added of internal audit, to the performance of the board and senior management, the relationship between internal audit and its key stakeholders and to enhanced organizational effectiveness as such. The respondents put forth, amongst other aspects, that effective communication can improve the perception of internal audit, strengthen

"the organizational speak-up culture" and help internal audit to become "a good control instrument for the board" that is "also useful to the organization".

To conclude, the quantitative and qualitative results underlined that effective communication between internal audit and the board and senior management is associated with many positive individual, relational and organizational outcomes, and that it is a necessary precondition for internal audit to add value to the organization.

9.2 Contributions

After the summary and discussion of the empirical findings for each research question in the previous section, this section serves to convey the contributions of this thesis for theory and professional practice.

9.2.1 Contributions to theory

This thesis contributed to all theories that were outlined in the second chapter, namely *systems theory*, *principal agency theory*, the *knowledge-based view of the firm* and the *theory of planned behavior*.

Concerning *systems theory*, the empirical results underlined the interdependence between the board and internal audit against the background of ensuring the effectiveness of corporate governance. Specifically, internal audit was found to have an inverse relationship with governance effectiveness. It could be inferred that when governance was less effective, internal audit performed better, possibly to help to increase the performance of the board as the primarily responsible organ for corporate governance.

Most of the underlying assumptions of *principal agency theory* were supported by the empirical results as well. Senior management performance had a significant and positive relationship with board performance, which was indicative of an effective supervision by the board. In terms of Pearson correlations, internal audit performance, board performance and senior management performance all had a positive correlations with governance effectiveness, only in the regression analysis the effect was absorbed by the strength of the variable for board performance. The fact that effective downward com-

munication was a moderator for the relationship between board performance and internal audit performance and between senior management performance and internal audit performance was a potential further evidence for information asymmetries that manifest for internal audit. The same moderation effect also uncovered for the relationship between internal audit performance and board performance with effective upward communication by internal audit to the board as the moderator. Thus, it might be assumed that the board members have at least some information deficits as well. Internal audit performance and senior management performance as such had a negative relationship with each other, except when the relationship was moderated through effective communication in the downward direction. Thus, senior management should act in a welfare-maximizing manner and cooperate with internal audit through effective communication in order for internal audit to add more value to the organization. The fact that the moderation effect was not significant for upward communication to senior management might suggest that senior management already receives sufficient information from other sources. If this is the case, the result could be interpreted as evidence for effective *combined assurance* by the *Three Lines of Defense*. Notwithstanding, one finding that was indicative of the validity of *stewardship theory* was that board independence was not significantly related to higher board performance or to higher internal audit performance in the quantitative analysis.

The underlying assumptions of the *knowledge-based view of the firm* were supported by the empirical findings because effective communication was associated with a great variety of beneficial organizational outcomes, including a more effective enterprise risk management. For this reason, the effective transfer and use of knowledge between internal audit and its two key stakeholders was found to hold immense value for the organization.

With regard to the *theory of planned behavior*, the direct link between perceived behavioral control and effective communication could be confirmed for the communication between internal audit and the board, whereas for communication with senior management the organizational culture was found to be the most important *antecedent*. Contradictory to this theory, the construct of the behavioral intention was consistently non-significant, both for effective communication with the board and for effective communication with senior management. The indirect path via behavioral intention hence

turned out to be less relevant for effective upward communication than the direct influence of the perceived behavioral control for communication with the board and of the organizational culture for communication with senior management. The means of the behavioral intention construct were rather high and the standard deviations were rather low compared to most other constructs. Consequently, it could be assumed that internal auditors generally intend to communicate effectively and that their motivation is intrinsic.

Although not a focal theory for the development of the hypotheses, a final theoretical contribution could be made with regard to *role theory* and the importance of clear expectations. Expectation management was mentioned 21 times by the respondents in the qualitative analysis and was identified simultaneously as a *constituent*, *antecedent* and *outcome* of effective communication. Therefore, it seemed likely that internal auditors experience either role ambiguity, role conflict or role overload in practice if the expectations of its two key stakeholders are misaligned, irreconcilable or unrealistic.

9.2.2 Contributions to practice

The empirical results further allowed deriving several contributions for the professional practice of internal auditing. In general and as previously highlighted many times, the practical importance of effective communication with the board and senior management was clearly confirmed, corresponding with the findings of recent practitioner studies that highlighted the need for strong communication skills for internal auditors[56].

Because the respondents seemed to have internalized the IIA *Mission*, the *Definition of Internal Auditing* and the *Code of Ethics*, internal auditors' behavioral intention and their work-related commitment were consistently high so that these constructs did not predict the effectiveness of upward communication.

Since perceived behavioral control was particularly relevant to promote effective communication with the board, organizations might increase the communication training for internal auditors in order to support their confidence and self-efficacy. In addition, it seems fundamental that internal audit and the board associate positive experiences with

[56] Also refer to section 1.3.

the communication with each other to provide internal auditors with the feeling that they can have a say in the communication process and its outcomes. To recapitulate once again, for effective communication with senior management, the extent to which the organizational culture supported the mandate of internal audit was the main *antecedent*. Therefore, the board and senior management should be motivated to create and sustain an organizational culture that strengthens the positive perception of internal audit as a value adding function or activity.

It could moreover be demonstrated that the nature of the relationship between internal audit, the board and senior management strongly influences how well they communicate and that the effectiveness of their communication in turn affects their working relationship. Specifically, a working relationship that is characterized by trust was regarded as paramount for developing and maintaining effective communication. Other attributes that were found indicative of a good working relationship, such as fairness, respect or appreciation, can be interpreted as by-products of a trustful working relationship. Consequently, it could be considered as extremely important that internal audit, the board and senior management actively seek to establish trust in their relationship and approach each other with a non-judgmental mindset. Furthermore, the respondents repeatedly pointed out their desire for (complementary) informal communication and more personal, face-to-face interaction. Thus, organizations might adjust their communication channels in a way that enables regular exchange also on an informal and personal basis.

Effective communication had a particularly strong effect on the performance of the board, respectively of internal audit, if the board and internal audit simultaneously performed well. Thus, although one must always consider the possibility of reverse causality, it could carefully be concluded that effective communication increases the performance of the board and of internal audit. The same moderation effect was found for effective downward communication from senior management, underlining the dependence of internal audit on senior management to receive relevant information. In fact, effective downward communication by senior management may be even more important for the performance of internal audit than effective upward communication by internal audit to senior management because internal audit depends on regular input from senior management, whereas senior management might be less dependent on communication with internal audit due to additionally receiving information from the *First* and *Second*

Line of Defense. Consequently, board members should be encouraged to instruct senior managers to improve their downward communication with internal audit.

In addition, the qualitative results underlined the importance of effective communication for risk management. In this respect, it was emphasized that effective communication enables the exchange on key risks, which in turn may lead to better risk identification, risk evaluation and risk response. As an implication for professional practice, the board might ensure that internal audit is informed in a timely and regular manner about emerging risks, especially when the organization operates in a fast-paced and complex business environment.

Finally, the empirical results suggested that the perceived communication effectiveness was partly very different in the respondents' organizations. The board and senior management should therefore become more aware and attuned to the current state of their communication with internal audit and promote positive change through the *Tone at the Top*, if necessary.

9.3 Limitations

Like every academic work, this thesis faced conceptual, theoretical and methodological limitations that are illustrated in this section.

Conceptually, the empirical study deliberately focused on effective communication with the board and senior management from an internal audit perspective in Switzerland. Since only internal auditors were surveyed, the perspectives of the board and of senior management were not reflected in the empirical results. In addition, no differentiation was made between the board and the audit committee because the sample size would have been too small for the statistical analysis. However, because the audit committee is a committee of the board, considering the board and the audit committee as equal was justifiable. The empirical study moreover did not aim to generate insights with regard to the drivers or benefits of *efficient* communication. Nonetheless, since the respondents considered timely communication as highly relevant when they were asked about the *constituents* of effective communication, it was suggested that efficiency could be regarded as a subordinate aspect of effectiveness in the context of the research phenomenon.

Theoretically, the focus was placed on the four management theories that were introduced in the second chapter, namely *systems theory*, *principal agency theory*, the *knowledge-based view of the firm* and the *theory of planned behavior.* These theories were used as a basis for the hypotheses and the quantitative analysis. Several researchers argued for a more holistic approach towards corporate governance research, simultaneously considering several management theories for a single research phenomenon (Aguilera et al., 2008; Eisenhardt, 1989). Thus, could be possible that even more theories could be applied than the ones that were concentrated on in this thesis. However, in order to reduce the theoretical complexity, selecting these four theories appeared to be the most reasonable and reconcilable solution.

Methodologically, social surveys can never fully exclude the possibility of social desirability bias. Social desirability bias assumes that the respondents tend to answer in the most socially acceptable manner instead of according to their actual opinion (Krumpal, 2013; Fisher, 1993). To reduce the likelihood of social desirability bias, the respondents were informed about the anonymity and confidentiality of the survey prior to participating. The results further suggested that the constructs that were most susceptible to social desirability bias, such as internal audit's own performance assessment, were assessed rather objectively. The respondents also seemed to have no preconceived assumptions about the hypotheses. The threat of social desirability bias to the validity of the results was consequently regarded as relatively low.

As discussed previously, the results for hypotheses 6-9 should be interpreted with caution due to the possibility of reverse causality. In addition, the empirical findings concerning the *outcomes* of effective communication depended largely on how the construct for governance effectiveness was operationalized. Since four items had to be excluded in order to fulfill the requirements of *convergent* and *discriminant validity*, the final measure for governance effectiveness comprised only the two items "*decision-making capability of the board is given*" as well as "*efficiency of the board is given*". Thus, had all of the original items been included, the then multidimensional construct might have led to different implications. Nevertheless, considering that multidimensional constructs are widely criticized due to their ambiguity and potentially confounding influence on other constructs, excluding the four items ultimately strengthened the validity and the reliability of the results (Edwards, 2001).

Furthermore, despite ascertaining that the qualitative results were valid and reliable, researcher bias that affects the coding process as well as the interpretation of the indicators and concepts is always possible.

Lastly, it must be acknowledged that the empirical results represented the opinions and evaluations of internal auditors at one single point of time. As the internal audit profession is highly dynamic, the implications should not be interpreted as a reflection of a permanent state. New developments, which include for example digitalization and data analytics, may affect and reshape the mandate of internal audit in the future and have profound effects on the effectiveness with which internal audit communicates with the board and senior management.

9.4 Research outlook

Since internal audit is currently still "among the least scientifically studied topics", this thesis aimed at providing the basis for future research in this field (Cohen & Sayag, 2010, p. 297). Several avenues for future research could be identified that are presented in this section.

As stated in the previous section, the empirical results were based on evaluations by internal auditors so that future researchers might investigate the research phenomenon from the perspective of the board or senior management to complement the findings of this thesis. By juxtaposing and comparing these implications, practitioners can obtain valuable cues in terms of how to implement the most effective internal communication process.

To the best of my knowledge, there is currently a lack of empirical research regarding the exact working mechanisms of trust in the context of the relationship between internal audit, the board and senior management. Since trust was identified to be fundamentally important for effective communication, future researchers could therefore focus even more in-depth on the role of trust for internal audit effectiveness, which might simultaneously provide more clarity for the current *Trusted Advisor*-debate. On a related note, as trust and expectation management seem to be closely connected, it would surely be valuable to investigate how internal audit and its key stakeholders can agree on realistic expectations while still remaining responsive to the changing needs of the organization.

Moreover, because this study did not focus on internal stakeholders besides the board and senior management, future researchers might also look more deeply into how different *combined assurance* techniques with other stakeholders can reduce control gaps and duplication of efforts, possibly including the role of effective communication. As internal audit has an important role for ensuring the effectiveness of risk management, another related research opportunity could be to analyze the communication and coordination between internal audit and risk management as a *Second Line* function. Better cooperation with risk management would be highly valuable for practitioners because it was found that the "level of coordination between internal audit and the risk management department is minimal at best" (Nagy & Cenker, 2002, p. 136). Moreover, a qualitative research approach that employs *grounded theory* would seem like a promising possibility to extend the insights of Decaux and Sarens (2015) who identified preliminary best practices for establishing and maintaining effective *combined assurance*[57].

Finally, without doubt the role of internal audit for effective governance is going to fascinate researchers in the years and possibly decades to come. Soh and Martinov-Bennie (2015) acknowledged that "governance issues are of the greatest current importance to IAFs" and that many governance topics are "widely expected to increase in importance to IAFs over the next five years, including strategic risks, risk management and organisational culture" (p. 102). Therefore, a great number of future studies might emerge that investigate more broadly through which means internal audit can add value to corporate governance – possibly confirming the pivotal role of effective communication as a leverage factor. Further possibilities in this respect could be the analysis of the question of how new technologies, data analytics or specific training may support internal audit's effectiveness and contribution to governance, risk management and internal control. Although the opinions currently diverge whether internal audit is truly a "prerequisite for good governance" (Raiborn et al., 2017), this controversy only adds to the topic's ongoing appeal for researchers and practitioners alike so that future research opportunities are generally ample and manifold.

[57] Also refer to section 3.2.2.

9.5 Concluding remarks

To conclude the thesis and to present a basis for future discussion, one selected implication from the empirical results should be linked to the overarching context of the development of the internal audit mandate, namely the association between effective communication and expectation management. The relevance of expectation management for internal auditors was remarkably stressed through the qualitative finding that it was coded three times as a *constituent*, *antecedent* and as an *outcome* of effective communication.

In the introduction, the long-standing question was introduced in how far internal audit can, as suggested by the IIA *Definition of Internal Auditing*, add value to corporate governance and how effective communication can be used to facilitate this. Thereby, it was emphasized that the value contribution of internal audit is unclear because its role is has not been sufficiently defined, resulting in an expectation gap between what the IIA envisions, what the key stakeholders expect and how much internal audit is able to deliver.

Since the mandate of internal audit has been continuously expanded over the past years[58] and it is likely that the expectations of the board and senior management have increased accordingly, it might be debated whether a slightly narrower definition of internal audit's responsibilities could benefit its effectiveness and value added. According to Arena and Azzone (2009), the mandate of internal audit should be defined with the primary intention that its value added to the organization is increased. They said that "in order to increase the ability of IA to respond to the needs of the organization and thus enhance its effectiveness", internal audit's "processes, competencies and roles need to be modelled accordingly" (Arena & Azzone, 2009, p. 55). The issue with determining the right expectations however is that a broad and ambitious mission is tempting – for the board and senior management, for the IIA and possibly also for the organization's external stakeholders. But then, is such an aspiring mandate realistic in the long-term? One is inclined to say "probably not".

Furthermore, evaluating the value added of internal audit against organizational outcomes like governance effectiveness could be precarious. Such outcomes are complex,

[58] Also refer to section 3.2.3.3.

overarching and multidimensional and it might be rather shortsighted to expect that internal audit, or any other governance function or activity for that matter, can substantially influence these outcomes by itself. Since the board bears the main responsibility for the organization, internal audit can assist the board with its duties but it is unlikely to outperform the board in terms of adding value to corporate governance. Even if the board and senior management have high expectations for internal audit to contribute to effective governance, the potential repercussions of role ambiguity, role conflict or role overload must be contemplated. If internal audit is expected to focus on governance-related tasks, it might be better to slim the audit plan in other areas to compensate.

Against this background, many respondents highlighted the need to use effective communication to clarify the oftentimes hidden expectations from the board and senior management and to evaluate whether these expectations are feasible. This insight seemed especially essential because appropriate expectation management is a logical precondition so that expectations can be fulfilled at all.

For internal audit to unfold its full potential and to resolve the debate concerning internal audit's role for effective governance, it is ultimately paramount that internal audit, the board and senior management use effective communication to reasonably define internal audit's responsibilities while still considering the organization's strategic and control-related objectives. Effective communication is the foundation for organizational behavior, the social glue for organizational members and the *sine qua non* for effective governance. In this way, effective communication is also inextricably linked to the value contribution of internal audit in the organization, or as one survey respondent stated: "If communication is not effective, and accepted by the various parties, internal audit becomes less useful… and almost a waste of time."

In summary, the readers of this thesis are encouraged to take away the following key insights:

- Effective communication between internal audit and the board and senior management holds significant value for internal audit, the board, senior management and the organization as a whole.
- The research phenomenon of effective communication between internal audit and the board and senior management is complex and overarching.

- Multiple theories apply and factors related to internal audit, the board, senior management, the message/information that is communicated, the communication channel, the working relationship and the organizational circumstances all play a pivotal role in explaining the research phenomenon's *constituents*, *antecedents* and *outcomes*.
- The relevance of IIA Standard 2420 – *Quality of Communications* was supported and communication quality was confirmed as the most central *constituent* of effective communication, although different quality criteria were considered most important for internal audit (*objectivity*), the board (*clarity*) and senior management (*timeliness*).
- Perceived behavioral control for communication with the board, an organizational culture that supports the mandate of internal audit for communication with senior management and, in general, a working relationship characterized by mutual trust were shown to be key *antecedents*.
- Organizations can facilitate effective communication through the design and choice of the communication channel, whereby formal communication was on average preferred for communication with the board and informal communication was on average favored for communication with senior management. In any case, face-to-face communication was considered to be more effective than communication for example via email or telephone.
- In terms of *outcomes*, effective communication between internal audit and the board and senior management was linked to higher performance of internal audit and the board, to enabling the business in many ways, to increased transparency and better risk management.
- Given the multitude and diversity of the insights that were generated during the quantitative and qualitative analyses, it could be shown that communication is the foundation of all organizational action and an integral, inextricable aspect of governance, risk management and internal control.

List of references

Abbott, L. J., Parker, S., & Peters, G. F. (2010). Serving two masters: The association between audit committee internal audit oversight and internal audit activities. *Accounting Horizons*, *24*(1), 1-24.

Abdelmoula, M., Chakroun, W., & Akrout, F. (2015). The effect of sample size and the number of items on reliability coefficients: Alpha and rho: A meta-analysis. *International Journal of Numerical Methods and Applications*, *13*(1), 1.

Abu Bakar, H., Dilbeck, K. E., & McCroskey, J. C. (2010). Mediating role of supervisory communication practices on relations between leader–member exchange and perceived employee commitment to workgroup. *Communication Monographs*, *77*(4), 637-656.

Adams, J. S. (1976). The structure and dynamics of behavior in organizational boundary roles. *Handbook of Industrial and Organizational Psychology*, *1175*, 1199.

Adams, M. B. (1994). Agency theory and the internal audit. *Managerial Auditing Journal*, *9*(8), 8-12.

Aguilera, R. V., Filatotchev, I., Gospel, H., & Jackson, G. (2008). An organizational approach to comparative corporate governance: Costs, contingencies, and complementarities. *Organization Science*, *19*(3), 475-492.

Ahmad, N., Othman, R., Othman, R., & Jusoff, K. (2009). The effectiveness of internal audit in Malaysian public sector. *Journal of Modern Accounting and Auditing*, *5*(9), 53.

Ahmad, Z., & Taylor, D. (2009). Commitment to independence by internal auditors: the effects of role ambiguity and role conflict. *Managerial Auditing Journal*, *24*(9), 899-925.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action Control* (pp. 11-39). Springer.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of Applied Social Psychology*, *32*(4), 665-683.

Ajzen, I., & Driver, B. L. (1992). Application of the theory of planned behavior to leisure choice. *Journal of Leisure Research*, *24*(3), 207-224.

Ajzen, I., & Fishbein, M. (1980). *A theory of Reasoned Action: Some Applications and Implications. Beliefs, Attitudes, and Values*. Nebraska Symposium on Motivation, Lincoln, NB. University of Nebraska Press.

Allen, M. W. (1992). Communication and organizational commitment: Perceived organizational support as a mediating factor. *Communication Quarterly*, *40*(4), 357-367.

Alzeban, A. (2015). The impact of culture on the quality of internal audit: An empirical study. *Journal of Accounting, Auditing & Finance*, *30*(1), 57-77.

Alzeban, A., & Gwilliam, D. (2014). Factors affecting the internal audit effectiveness: A survey of the Saudi public sector. *Journal of International Accounting, Auditing and Taxation*, *23*(2), 74-86.

Alzeban, A., & Sawan, N. (2015). The impact of audit committee characteristics on the implementation of internal audit recommendations. *Journal of International Accounting, Auditing and Taxation*, *24*, 61-71.

Archambeault, D. S., DeZoort, F. T., & Holt, T. P. (2008). The need for an internal auditor report to external stakeholders to improve governance transparency. *Accounting Horizons*, *22*(4), 375-388.

Arena, M., & Azzone, G. (2009). Identifying organizational drivers of internal audit effectiveness. *International Journal of Auditing*, *13*(1), 43-60.

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of Marketing Research*, 396-402.

Austin, P. C., & Steyerberg, E. W. (2015). The number of subjects per variable required in linear regression analyses. *Journal of Clinical Epidemiology*, *68*(6), 627-636.

Baker, N. (2011). Raising internal audit's potential. *Internal Auditor*, *68*(6), 30-35.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, *37*(2), 122.

Barney, J. B. (1986). Organizational culture: can it be a source of sustained competitive advantage?. *Academy of Management Review*, *11*(3), 656-665.

Barney, J.B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120.

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management*, *27*(6), 643-650.

Bartels, J., Peters, O., de Jong, M., Pruyn, A., & van der Molen, M. (2010). Horizontal and vertical communication as determinants of professional and organisational identification. *Personnel Review*, *39*(2), 210-226.

Baysinger, B. D., & Butler, H. N. (1985). Corporate governance and the board of directors: Performance effects of changes in board composition. *Journal of Law, Economics, & Organization*, *1*(1), 101-124.

Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Neal, T. L. (2009). The audit committee oversight process. *Contemporary Accounting Research*, *26*(1), 65-122.

Bebchuk, L. A., & Weisbach, M. S. (2010). The state of corporate governance research. *The Review of Financial Studies*, *23*(3), 939-961.

Bell, E., Bryman, A., & Harley, B. (2018). *Business Research Methods*. Oxford University Press.

Benton, T. (2001). *Philosophy of Social Science: The philosophical foundations of Social Thought*.

Berle, A., & Means, G. (1932). *Private property and the modern corporation*. Macmillan.

Berlo, D. K. (1960). *The Process of Communication*. Holt, Rinehart and Winston.

Bernard, H. R. (2017). *Research methods in anthropology: Qualitative and quantitative approaches*. Rowman & Littlefield.

Bhagat, S., & Black, B. (1999). The uncertain relationship between board composition and firm performance. *The Business Lawyer*, 921-963.

Bhagat, S., & Black, B. (2001). The non-correlation between board independence and long-term firm performance. *J. CorP. l.*, *27*, 231.

Blythe, J. (2009). *Key Concepts in Marketing*. Sage Publications.

Bogart, D. B. (1994). Liability of Directors of Chapter 11 Debtors in Possession: Don't Look Back – Something May Be Gaining on You. *Am. Bankr. LJ*, *68*, 155.

Bogenrieder, I., & Nooteboom, B. (2004). Learning groups: What types are there? A theoretical analysis and an empirical study in a consultancy firm. *Organization Studies*, *25*(2), 287-313.

Borgatti, S. P. (2005). Centrality and network flow. *Social Networks*, *27*(1), 55-71.

Bormann, E. G. (1983). Symbolic convergence: Organizational communication and culture. *Communication and organizations: An interpretive approach*, 99-122.

Boulding, K. E. (1956). General systems theory – the skeleton of science. *Management Science*, *2*(3), 197-208.

Bou-Raad, G. (2000). Internal auditors and a value-added approach: the new business regime. *Managerial Auditing Journal*, *15*(4), 182-187.

Bournois, F., Duval-Hamel, J., Roussillon, S., & Scaringella, J. (Eds.). (2010). *Handbook of Top Management Teams*. Springer.

Bower, J. L. (1970). *Managing the Resource Allocation Process*. Harvard University Press.

Boyd, B. (1990). Corporate linkages and organizational environment: A test of the resource dependence model. *Strategic Management Journal*, *11*(6), 419-430.

Braiotta Jr, L., Gazzaway, R. T., Colson, R., & Ramamoorti, S. (2010). *The Audit Committee Handbook*. John Wiley & Sons.

Brass, D. J., & Burkhardt, M. E. (1992). Centrality and power in organizations. *Networks and organizations: Structure, form, and action*, *191*(215), 198-213.

Bryman A & Bell E. (2015). *Business Research Methods.* Oxford University Press.

Burke, R. J., & Wilcox, D. S. (1969). Effects of different patterns and degrees of openness in superior-subordinate communication on subordinate job satisfaction. *Academy of Management Journal*, *12*(3), 319-326.

Burns, D. C., Greenspan, J. W., & Hartwell, C. (1994). The state of professionalism in internal auditing. *Accounting Historians Journal*, *21*(2), 85-116.

Cadbury, A. (1992). *Report of the committee on the financial aspects of corporate governance* (Vol. 1).

Cameron, K. S., & Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the Competing Values Framework*. John Wiley & Sons.

Carcello, J. V., Eulerich, M., Masli, A., & Wood, D. A. (2018). The value to management of using the internal audit function as a management training ground. *Accounting Horizons*.

Carcello, J. V., Hermanson, D. R., & Ye, Z. (2011). Corporate governance research in accounting and auditing: Insights, practice implications, and future research directions. *Auditing: A Journal of Practice & Theory*, *30*(3), 1-31.

Cartwright, N., & Montuschi, E. (Eds.). (2014). *Philosophy of Social Science: A New Introduction*. Oxford University Press.

Chambers, A. (2008). The board's black hole – filling their assurance vacuum: can internal audit rise to the challenge?. *Measuring Business Excellence*, *12*(1), 47-63.

Chambers, A. D., & Odar, M. (2015). A new vision for internal audit. *Managerial Auditing Journal*, *30*(1), 34-55.

Chang, M. K. (1998). Predicting unethical behavior: a comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics*, *17*(16), 1825-1834.

Chen, C. J., & Huang, J. W. (2007). How organizational climate and structure affect knowledge management – The social interaction perspective. *International Journal of Information Management*, *27*(2), 104-118.

Chen, C. S., Chang, S. F., & Liu, C. H. (2012). Understanding knowledge-sharing motivation, incentive mechanisms, and satisfaction in virtual communities. *Social Behavior and Personality: An International Journal*, *40*(4), 639-647.

Cheng, S., Lam, T., & Hsu, C. H. (2006). Negative word-of-mouth communication intention: An application of the theory of planned behavior. *Journal of Hospitality & Tourism Research*, *30*(1), 95-116.

Child, J. (1972). Organizational structure, environment and performance: The role of strategic choice. *Sociology*, *6*(1), 1-22.

Christopher, J., Sarens, G., & Leung, P. (2009). A critical analysis of the independence of the internal audit function: evidence from Australia. *Accounting, Auditing & Accountability Journal*, *22*(2), 200-220.

Coase, R. H. (1937). The nature of the firm. *Economica*, *4*(16), 386-405.

Cochran, W. G. (1977). *Sampling Techniques*. John Wiley & Sons.

Cohen, A., & Sayag, G. (2010). The effectiveness of internal auditing: an empirical examination of its determinants in Israeli organisations. *Australian Accounting Review*, *20* (3), 296-307.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155.

Cohen, W., & Levinthal, D. (1990). Tacit knowledge and scientific networks. *Administrative Science Quarterly*, *35*(1), 128-152.

Colbert, J. L. (2002). Corporate governance: communications from internal and external auditors. *Managerial Auditing Journal*, *17*(3), 147-152.

Collins, D. (2003). Pretesting survey instruments: an overview of cognitive methods. *Quality of Life Research*, *12*(3), 229-238.

Committee of the Sponsoring Organizations of the Treadway Commission (COSO). 2013. *Internal Control – Integrated Framework*. Jersey City.

Committee of the Sponsoring Organizations of the Treadway Commission (COSO). 2017. *Enterprise Risk Management – Integrating with Strategy and Performance*. Jersey City.

Conrad, C., & Poole, M. S. (2012). *Strategic Organizational Communication: In a Global Economy*. John Wiley & Sons.

Conrath, D. W. (1973). Communication patterns, organizational structure, and man: Some relationships. *Human Factors*, *15*(5), 459-470.

Coram, P., Ferguson, C., & Moroney, R. (2008). Internal audit, alternative internal audit structures and the level of misappropriation of assets fraud. *Accounting & Finance*, *48*(4), 543-559.

Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, *13*(1), 3-21.

Couper, M. P. (2008). *Designing Effective Web Surveys*. Cambridge University Press.

Creswell, J. W. (2014). *A Concise Introduction to Mixed Methods Research*. Sage Publications.

Cuervo-Cazurra, A., Andersson, U., Brannen, M. Y., Nielsen, B. B., & Reuber, A. R. (2016). From the Editors: Can I trust your findings? Ruling out alternative explanations in international business research. *Journal of International Business Studies*, *47*(8), 881-897.

Cyert, R. M., Feigenbaum, E. A., & March, J. G. (1959). Models in a behavioral theory of the firm. *Behavioral Science*, *4*(2), 81-95.

Cyert, R. M., & March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs.

Daft, R. L., & Lengel, R. H. (1986). Organizational information requirements, media richness and structural design. *Management Science*, *32*(5), 554-571.

Daily, C. M., & Dalton, D. R. (1994). Bankruptcy and corporate governance: The impact of board composition and structure. *Academy of Management Journal*, *37*(6), 1603-1617.

Daily, C. M., Dalton, D. R., & Cannella Jr., A. A. (2003). Corporate governance: Decades of dialogue and data. *Academy of Management Review*, *28*(3), 371-382.

Dalton, D. R., Todor, W. D., Spendolini, M. J., Fielding, G. J., & Porter, L. W. (1980). Organization structure and performance: A critical review. *Academy of Management Review*, *5*(1), 49-64.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, *22*(1), 20-47.

Dawkins, J. (2005). Corporate responsibility: The communication challenge. *Journal of Communication Management*, *9*(2), 108-119.

Decaux, L., & Sarens, G. (2015). Implementing combined assurance: insights from multiple case studies. *Managerial Auditing Journal*, *30*(1), 56-79.

Denison, D. R. (1990). *Corporate Culture and Organizational Effectiveness*. John Wiley & Sons.

Denzin, N. K. (1978). Triangulation: A case for methodological evaluation and combination. *Sociological Methods*, 339-357.

De Ridder, J. A. (2004). Organisational communication and supportive employees. *Human Resource Management Journal*, *14*(3), 20-30.

Dessein, W. (2002). Authority and communication in organizations. *The Review of Economic Studies*, *69*(4), 811-838.

DiMaggio, P., & Powell, W. W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, *48*(2), 147-160.

Dittenhofer, M. (2001a). Internal auditing effectiveness: an expansion of present methods. *Managerial Auditing Journal*, *16*(8), 443-450.

Dittenhofer, M. (2001b). Reengineering the internal auditing organization. *Managerial Auditing Journal*, *16*(8), 458-468.

Donaldson, L. (1990). The ethereal hand: Organizational economics and management theory. *Academy of Management Review*, *15*(3), 369-381.

Donaldson, L., & Davis, J. H. (1991). Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, *16*(1), 49-64.

Drazin, R. (81). Van de Ven, A. H. (1985). *Alternative forms of fit in contingency theory. Administrative Science Quarterly*, *30*, 514-539.

Economiesuisse (2016). *Swiss Code of Best Practice for Corporate Governance* (Swiss Code). Zürich.

Edmondson, A. C., & McManus, S. E. (2007). Methodological fit in management field research. *Academy of Management Review*, *32*(4), 1246-1264.

Edwards, J. R. (2001). Multidimensional constructs in organizational behavior research: An integrative analytical framework. *Organizational Research Methods*, *4*(2), 144-192.

Efron, B. (1982). *The Jackknife, the Bootstrap, and Other Resampling Plans* (Vol. 38). Siam.

Ege, M. S. (2014). Does internal audit function quality deter management misconduct?. *The Accounting Review*, *90*(2), 495-527.

Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of Management Review*, *14*(1), 57-74.

Eriksson, P., & Kovalainen, A. (2015). *Qualitative Methods in Business Research: A Practical Guide to Social Research*. Sage Publications.

Eulerich, M. (2017). *Enquete 2017 – Die Interne Revision in Deutschland, Österreich und der Schweiz*. Retrieved March 1, 2019 from: https://www.diir.de/.

Eulerich, M., & van Uum, C. (2017). Die Interne Revision als Unterstützer von Vorstand und Aufsichtsrat. *Schmalenbachs Zeitschrift für betriebswirtschaftliche Forschung*, *69*(3), 275-310.

European Confederation of Institutes of Internal Auditing (ECIIA) & Federation of European Risk Management Associations (FERMA) (2010). *Guidance on the 8th EU Company Law Directive*.

Fadzil, F., Haron, H., & Jantan, M. (2005). Internal auditing practices and internal control system. *Managerial Auditing Journal*, *20*(8), 844-866.

Fama, E. F. (1980). Agency problems and the theory of the firm. *Journal of Political Economy*, *88*(2), 288-307.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law and Economics*, *26*(2), 301-325.

Fazli Aghghaleh, S., Muhammaddun Mohamed, Z., & Ahmad, A. (2014). The effects of personal and organizational factors on role ambiguity amongst internal auditors. *International Journal of Auditing*, *18*(2), 105-114.

Filatotchev, I., & Boyd, B. K. (2009). Taking stock of corporate governance research while looking to the future. *Corporate Governance: An International Review*, *17*(3), 257-265.

Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards*. Oxford University Press.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research.* Addison-Wesley.

Fisher, R. J. (1993). Social desirability bias and the validity of indirect questioning. *Journal of Consumer Research*, *20*(2), 303-315.

Flesher, D. L., & Zanzig, J. S. (2000). Management accountants express a desire for change in the functioning of internal auditing. *Managerial Auditing Journal*, *15*(7), 331-337.

Fornell, C. (1983). Issues in the application of covariance structure analysis: A comment. *Journal of Consumer Research*, *9*(4), 443-448.

Freeman, L. C. (1978). Centrality in social networks conceptual clarification. *Social Networks*, *1*(3), 215-239.

Gales, L. M., & Kesner, I. F. (1994). An analysis of board of director size and composition in bankrupt organizations. *Journal of Business Research*, *30*(3), 271-282.

Gerbing, D. W., & Anderson, J. C. (1984). On the meaning of within-factor correlated measurement errors. *Journal of Consumer Research*, *11*(1), 572-580.

Gerbing, D. W., & Anderson, J. C. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research*, 186-192.

Gibbs, G. R. (2018). *Analyzing Qualitative Data* (Vol. 6). Sage Publications.

Glauser, M. J. (1984). Upward information flow in organizations: Review and conceptual analysis. *Human Relations*, *37*(8), 613-643.

Godin, G., & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American Journal of Health Promotion*, *11*(2), 87-98.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, *8*(4), 597-606.

Goodman, E. A., Zammuto, R. F., & Gifford, B. D. (2001). The competing values framework: Understanding the impact of organizational culture on the quality of work life. *Organization Development Journal*, *19*(3), 58.

Goodman, M. B., & Hirsch, P. B. (2010). *Corporate Communication: Strategic Adaptation for Global Practice*. Peter Lang.

Goodwin, J. (2003). The relationship between the audit committee and the internal audit function: Evidence from Australia and New Zealand. *International Journal of Auditing*, *7*(3), 263-278.

Goodwin, J., & Yeo, T. Y. (2001). Two factors affecting internal audit independence and objectivity: Evidence from Singapore. *International Journal of Auditing*, *5*(2), 107-125.

Goodwin-Stewart, J., & Kent, P. (2006). The use of internal audit by Australian companies. *Managerial Auditing Journal*, *21*(1), 81-101.

Gordon, G. G., & DiTomaso, N. (1992). Predicting corporate performance from organizational culture. *Journal of Management Studies*, *29*(6), 783-798.

Gramling, A. A., Maletta, M. J., Schneider, A., & Church, B. K. (2004). The role of the internal audit function in corporate governance: A synthesis of the extant internal auditing literature and directions for future research. *Journal of Accounting literature*, *23*, 194.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, *17*(S2), 109-122.

Grossman, S. J., & Hart, O. D. (1983). Implicit contracts under asymmetric information. *The Quarterly Journal of Economics*, 123-156.

Grunig, J. E., & Hunt, T. T. (1984). *Managing Public Relations*. Holt, Rinehart and Winston.

Hage, J., & Aiken, M. (1967). Relationship of centralization to other structural properties. *Administrative Science Quarterly*, 72-92.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate Data Analyses with Readings*. Englewood Cliffs.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis* (Vol. 6). Pearson Prentice Hall.

Halinski, R. S., & Feldt, L. S. (1970). The selection of variables in multiple regression analysis. *Journal of Educational Measurement*, *7*(3), 151-157.

Hallahan, K., Holtzhausen, D., Van Ruler, B., Verčič, D., & Sriramesh, K. (2007). Defining strategic communication. *International Journal of Strategic Communication*, *1* (1), 3-35.

Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, *20*(4), 986-1014.

Hartnell, C. A., Ou, A. Y., & Kinicki, A. (2011). Organizational culture and organizational effectiveness: a meta-analytic investigation of the competing values framework's theoretical suppositions. *Journal of Applied Psychology*, *96*(4), 677.

Heath, R. L., & Bryant, J. (2000). *Human Communication Theory and Research: Concepts, Contexts, and Challenges*. Routledge.

Heise, D. R. (1969). Problems in path analysis and causal inference. *Sociological Methodology*, *1*, 38-73.

Hermanson, D. R., & Rittenberg, L. E. (2003). Internal audit and organizational governance. *Research Opportunities in Internal Auditing*, *1*, 25-71.

Hermida, R. (2015). The problem of allowing correlated errors in structural equation modeling: concerns and considerations. *Computational Methods in Social Sciences*, *3*(1), 5.

Hillman, A. J., Cannella, A. A., & Paetzold, R. L. (2000). The resource dependence role of corporate directors: Strategic adaptation of board composition in response to environmental change. *Journal of Management Studies*, *37*(2), 235-256.

Hillman, A. J., & Dalziel, T. (2003). Boards of directors and firm performance: Integrating agency and resource dependence perspectives. *Academy of Management review*, *28*(3), 383-396.

Hofstetter, K. (2002). *Corporate Governance in der Schweiz*. Bericht im Zusammenhang mit den Arbeiten der Expertengruppe "Corporate Governance". Zürich.

Hooijberg, R., & Petrock, F. (1993). On cultural change: Using the competing values framework to help leaders execute a transformational strategy. *Human Resource Management*, *32*(1), 29-50.

Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, *15*(4), 635-650.

Huibers, S. C. (2015). *Combined Assurance: One Language, One Voice, One View*. Common Body of Knowledge (CBOK)/IIA.

Huse, E. F., & Bowditch, J. L. (1973). *Behavior in Organizations: A Systems Approach to Management*. Addison-Wesley.

Hussein, A. (2015). The use of triangulation in social sciences research: Can qualitative and quantitative methods be combined?. *Journal of Comparative Social Work*, *4*(1).

Iacobucci, D., & Duhachek, A. (2003). Advancing alpha: Measuring reliability with confidence. *Journal of Consumer Psychology*, *13*(4), 478-487.

Ilieva, J., Baron, S., & Healey, N. M. (2002). Online surveys in marketing research: Pros and cons. *International Journal of Market Research*, *44*(3), 361-376.

Jablin, F. M., & Krone, K. J. (1987). Organizational assimilation. *Handbook of Communication Science*, *711*, 746.

Jarvenpaa, S. L., & Staples, D. S. (2001). Exploring perceptions of organizational ownership of information and expertise. *Journal of Management Information Systems*, *18*(1), 151-183.

Jensen, M. C. (1993). The modern industrial revolution, exit, and the failure of internal control systems. *The Journal of Finance*, *48*(3), 831-880.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Jensen, M. C., & Meckling, W. H. (1992). Knowledge, control and organizational structure: Parts I and II. *Contract Economics*, 251-74.

Johnson, J. L., Daily, C. M., & Ellstrand, A. E. (1996). Boards of directors: A review and research agenda. *Journal of Management*, *22*(3), 409-438.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14-26.

Johnson, R. B., & Turner, L. A. (2003). Data collection strategies in mixed methods research. *Handbook of Mixed Methods in Social and Behavioral Research*, 297-319.

Johnson, R. E., Rosen, C. C., & Djurdjevic, E. (2011). Assessing the impact of common method variance on higher order multidimensional constructs. *Journal of Applied Psychology*, *96*(4), 744.

Jolliffe, I. T. (2011). *Principal Component Analysis*. Springer.

Joppe, G. (2000). Testing reliability and validity of research instruments. *Journal of American Academy of Business Cambridge*, *4*(1/2), 49-54.

Judge Jr., W. Q., & Zeithaml, C. P. (1992). Institutional and strategic choice perspectives on board involvement in the strategic decision process. *Academy of Management Journal*, *35*(4), 766-794.

Jungmann, C. (2006). The effectiveness of corporate governance in one-tier and two-tier board systems – Evidence from the UK and Germany. *European Company and Financial Law Review*, *3*(4), 426-474.

Kahn, W. A. (1992). To be fully there: Psychological presence at work. *Human Relations*, *45*(4), 321-349.

Katz, D., & Kahn, R. L. (1978). Organizations and the system concept. *Classics of Organization Theory*, 161-172.

Kast, F. E., & Rosenzweig, J. E. (1972). General systems theory: Applications for organization and management. *Academy of Management Journal*, *15*(4), 447-465.

Kim, B., Burns, M. L., & Prescott, J. E. (2009). The strategic role of the board: The impact of board structure on top management team strategic action capability. *Corporate Governance: An International Review*, *17*(6), 728-743.

Knell, A. (2006). *Corporate Governance: How to Add Value to your Company: A Practical Implementation Guide*. Elsevier.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, *3*(3), 383-397.

KPMG (2016). *Seeking Value through Internal Audit Study.* Retrieved March 1, 2019 from: https://home.kpmg/uk/en/home/insights/2016/03/seeking-value-through-internal-audit.html.

Krivogorsky, V. (2006). Ownership, board structure, and performance in continental Europe. *The International Journal of Accounting*, *41*(2), 176-197.

Krosnick, J. A. (1999). Survey research. *Annual Review of Psychology*, *50*(1), 537-567.

Krumpal, I. (2013). Determinants of social desirability bias in sensitive surveys: a literature review. *Quality & Quantity*, *47*(4), 2025-2047.

Kyburz, A. (2016). *Internal Auditing in Switzerland. Stakeholder Expectations versus Self-Perception. A Theoretical and Empirical Analysis from a Management Perspective* (Doctoral dissertation). St. Gallen.

Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, *49*(3), 186-205.

Lee Larson, L. (2004). Internal auditors and job stress. *Managerial Auditing Journal*, *19*(9), 1119-1130.

Lenz, R., & Hahn, U. (2015). A synthesis of empirical internal audit effectiveness literature pointing to new research opportunities. *Managerial Auditing Journal*, *30*(1), 5-33.

Lenz, R., & Sarens, G. (2012). Reflections on the internal auditing profession: what might have gone wrong?. *Managerial Auditing Journal*, *27*(6), 532-549.

Leung, P., Cooper, B. J., & Perera, L. (2011). Accountability structures and management relationships of internal audit: An Australian study. *Managerial Auditing Journal*, *26*(9), 794-816.

Leung, P., Cooper, B. J., & Robertson, P. (2003). *The role of internal audit in corporate governance and management* (Doctoral dissertation). Institute of Internal Auditors (Australia)).

Lurati, F., & Eppler, M. J. (2006). Communication and management: researching corporate communication and knowledge communication in organizational settings. *Studies in Communication Sciences*, *6*(2).

Mahoney, J. T., & Pandian, J. R. (1992). The resource-based view within the conversation of strategic management. *Strategic management journal*, *13*(5), 363-380.

March, J. G., & Simon, H. A. (1958). *Organizations*. John Wiley & Sons.

Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*, *2*(3), 173-191.

McNulty, T., & Pettigrew, A. (1999). Strategists on the board. *Organization Studies*, *20*(1), 47-74.

Messier Jr., W. F., Reynolds, J. K., Simon, C. A., & Wood, D. A. (2011). The effect of using the internal audit function as a management training ground on the external auditor's reliance decision. *The Accounting Review*, *86*(6), 2131-2154.

Meyer, J. P. & Allen, N. J. (1997). *Commitment in the Workplace*. Sage Publications.

Meyer, J. P., Paunonen, S. V., Gellatly, I. R., Goffin, R. D., & Jackson, D. N. (1989). Organizational commitment and job performance: It's the nature of the commitment that counts. *Journal of Applied Psychology*, *74*(1), 152.

Mihret, D. G., James, K., & Mula, J. M. (2010). Antecedents and organisational performance implications of internal audit effectiveness: some propositions and research agenda. *Pacific Accounting Review*, *22*(3), 224-252.

Mihret, D. G., & Woldeyohannis, G. Z. (2008). Value-added role of internal audit: an Ethiopian case study. *Managerial Auditing Journal*, *23*(6), 567-595.

Mihret, D. G., & Yismaw, A. W. (2007). Internal audit effectiveness: an Ethiopian public sector case study. *Managerial Auditing Journal*, *22*(5), 470-484.

Miles, R. H., & Perreault Jr., W. D. (1976). Organizational role conflict: Its antecedents and consequences. *Organizational Behavior and Human Performance*, *17*(1), 19-44.

Milgrom, P., & Roberts, J. (1990). Bargaining costs, influence costs, and the organization of economic activity. *Perspectives on Positive Political Economy*, *57*, 60.

Miller, D. E., & Kunce, J. T. (1973). Prediction and statistical overkill revisited. *Measurement and Evaluation in Guidance*, *6*(3), 157-163.

Mintzberg, H. (1989). *The Structuring of Organizations*. In Readings in Strategic Management (pp. 322-352). Palgrave.

Misangyi, V. F., & Acharya, A. G. (2014). Substitutes or complements? A configurational examination of corporate governance mechanisms. *Academy of Management Journal*, *57*(6), 1681-1705.

Mom, T. J., Van Den Bosch, F. A., & Volberda, H. W. (2007). Investigating managers' exploration and exploitation activities: The influence of top-down, bottom-up, and horizontal knowledge inflows. *Journal of Management Studies*, *44*(6), 910-931.

Mooney, C. Z., Duval, R. D., & Duvall, R. (1993). *Bootstrapping: A Nonparametric Approach to Statistical Inference* (No. 94-95). Sage Publications.

Mutchler, J. F. (2003). Independence and objectivity: a framework for research opportunities in internal auditing. *Research Opportunities in Internal Auditing*, 231-268.

Mutchler, J. F., Chang, S., & Prawitt, D. (2001). *Independence and Objectivity: A Framework for Internal Auditors*. Altamonte Springs.

Myers, P. M., & Gramling, A. A. (1997). The perceived benefits of certified internal auditor designation. *Managerial Auditing Journal*, *12*(2), 70-79.

Nagy, A. L., & Cenker, W. J. (2002). An assessment of the newly defined internal audit function. *Managerial Auditing Journal*, *17*(3), 130-137.

Newbert, S. L. (2007). Empirical research on the resource-based view of the firm: an assessment and suggestions for future research. *Strategic Management Journal*, *28*(2), 121-146.

Nickerson, J. A., & Zenger, T. R. (2004). A knowledge-based theory of the firm – The problem-solving perspective. *Organization Science*, *15*(6), 617-632.

Nonaka, I., Toyama, R., & Nagata, A. (2000). A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and Corporate Change*, *9*(1), 1-20.

Nonaka, I., & Von Krogh, G. (2009). Perspective – Tacit knowledge and knowledge conversion: Controversy and advancement in organizational knowledge creation theory. *Organization Science*, *20*(3), 635-652.

Nunnally, J. (1978). *Psychometric Methods*.

Oldham, G. R., & Hackman, J. R. (1981). Relationships between organizational structure and employee reactions: Comparing alternative frameworks. *Administrative Science Quarterly*, 66-83.

Organization for Economic Cooperation and Development (OECD)/G20 (2015). G20/*OECD Principles of Corporate Governance*. Retrieved March 1, 2019 from: https://www.oecd-ilibrary.org/governance/g20-oecd-principles-of-corporate-governance-2015_9789264236882-en.

Oussii, A. A., & Boulila Taktak, N. (2018). The impact of internal audit function characteristics on internal control quality. *Managerial Auditing Journal*, *33*(5), 450-469.

Oxner, T., & Oxner, K. (2006). Boom time for internal audit professionals: thanks to the profession's growing stature, internal auditors are enjoying higher salaries and greater career opportunities, The IIA's latest Job Market Survey reports. *Internal Auditor*, *63*(3), 50-57.

Papa, M.J., Daniels, T.D., & Spiker, B.K. (2008). *Organizational Communication Perspectives and Trends*. Sage Publications.

Patton, M. Q. (2015). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*. Sage Publications.

Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*, 115-143.

Pearce, J. A., & Zahra, S. A. (1992). Board composition from a strategic contingency perspective. *Journal of Management Studies*, *29*(4), 411-438.

Peng, M. W. (2004). Outside directors and firm performance during institutional transitions. *Strategic Management Journal*, *25*(5), 453-471.

Penley, L. E., & Hawkins, B. (1985). Studying interpersonal communication in organizations: A leadership application. *Academy of Management Journal*, *28*(2), 309-326.

Pennings, J. M. (1992). Structural contingency theory-a reappraisal. *Research in Organizational Behavior*, *14*, 267-309.

Perrow, C. (1986). Economic theories of organization. *Theory and Society*, *15*(1-2), 11-45.

Pertusa-Ortega, E. M., Zaragoza-Sáez, P., & Claver-Cortés, E. (2010). Can formalization, complexity, and centralization influence knowledge performance?.. *Journal of Business Research*, *63*(3), 310-320.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal*, *14*(3), 179-191.

Pidgeon, N., & Henwood, K. (1997). *Using Grounded Theory in Psychological Research*. *In N. Hayes (Ed.),* Doing Qualitative Analysis in Psychology (pp. 245-273). Taylor & Francis.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.

Poon, J. M. (2012). Distributive Justice, Procedural Justice, Affective Commitment, and Turnover Intention: A Mediation–Moderation Framework 1. *Journal of Applied Social Psychology*, *42*(6), 1505-1532.

Punch, K. F. (2014). *Introduction to Social Research: Quantitative and Qualitative approaches*. Sage Publications.

Putti, J. M., Aryee, S., & Phua, J. (1990). Communication relationship satisfaction and organizational commitment. *Group & Organization Studies*, *15*(1), 44-52.

PricewaterhouseCoopers (PwC) (2017). *State of the Internal Audit Profession Study*. Retrieved March 1, 2019 from: https://www.pwc.com/us/en/cfodirect/issues/risk-management/internal-audit-transformation-study-2017.html.

Quinn, R. E., & Rohrbaugh, J. (1983). A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. *Management Science*, *29*(3), 363-377.

Quirke, B. (2008). Making the connections. *Using Internal Communication to Turn Strategy into Action*. Routledge.

Raghunandan, K., Rama, D. V., & Read, W. J. (2001). Audit committee composition, "gray directors" and interaction with internal auditing. *Accounting Horizons*, *15*(2), 105-118.

Raiborn, C., Butler, J. B., Martin, K., & Pizzini, M. (2017). The Internal audit function: A prerequisite for good governance. *Journal of Corporate Accounting & Finance*, *28*(2), 10-21.

Rediker, K. J., & Seth, A. (1995). Boards of directors and substitution effects of alternative governance mechanisms. *Strategic Management Journal*, *16*(2), 85-99.

Risjord, M. (2014). *Philosophy of Social Science: A Contemporary Introduction*. Routledge.

Roberts, K. H., & O'Reilly III, C. A. (1974a). Measuring organizational communication. *Journal of Applied Psychology*, *59*(3), 321-326.

Roberts, K. H., & O'Reilly III, C. A. (1974b). Failures in upward communication in organizations: Three possible culprits. *Academy of Management Journal*, *17*(2), 205-215.

Rosenstein, S., & Wyatt, J. G. (1990). Outside directors, board independence, and shareholder wealth. *Journal of Financial Economics*, *26*(2), 175-191.

Roussy, M. (2013). Internal auditors' roles: from watchdogs to helpers and protectors of the top manager. *Critical Perspectives on Accounting*, *24*(7-8), 550-571.

Ruck, K. (Ed.) (2010). *Exploring Internal Communication.* Harlow Pearson Education.

Ruck, M. K. (Ed.) (2015). *Exploring Internal Communication: Towards Informed Employee Voice*. Gower Publishing, Ltd.

Ruigrok, W., Peck, S. I., & Keller, H. (2006). Board characteristics and involvement in strategic decision making: Evidence from Swiss companies. *Journal of Management Studies*, *43*(5), 1201-1226.

Ruud, F. (2003). The Internal Audit Function: An Integral Part of Organizational Governance. *The Institute of Internal Auditors Research Foundation.*

Ruud, F., & Bodenmann, J. M. (2001). Corporate Governance und Interne Revision: Neuorientierung der Internen Revision, um einen zentralen Beitrag zu eine effektiven Corporate Governance zu leisten. *Der Schweizer Treuhänder* (now: EXPERT FOCUS), *75*(6-7), 521-534.

Ruud, F., & Friebe, P. (2013). *Leitlinie zum Internen Audit*. Zürich.

Ruud, F., Schmitz, D. & Rüdisser, M. F.: *Risk Control Assurance: Die Rolle der Internen Revision.* In Lück, Wolfgang (Ed.): Jahrbuch für Wirtschafsprüfung, Interne Revision und Unternehmensberatung 2010. Oldenbourg Wissenschaftsverlag, 2010, pp. 149-158.

Ryan, T. P. (2009). *Modern Regression Methods*. John Wiley & Sons.

Sarens, G. (2009). Internal auditing research: Where are we going?. Editorial. *International Journal of Auditing*, *13*(1), 1-7.

Sarens, G., & De Beelde, I. (2006a). The relationship between internal audit and senior management: A qualitative analysis of expectations and perceptions. *International Journal of Auditing*, *10*(3), 219-241.

Sarens, G., & De Beelde, I. (2006b). Internal auditors' perception about their role in risk management: A comparison between US and Belgian companies. *Managerial Auditing Journal*, *21*(1), 63-80.

Sarens, G., De Beelde, I., & Everaert, P. (2009). Internal audit: A comfort provider to the audit committee. *The British Accounting Review*, *41*(2), 90-106.

Sarens, G., Decaux, L., & Lenz, R. (2012). Combined Assurance – Case Studies on a Holistic Approach to Organizational Governance. *IIA Research Foundation*.

Scarbrough, D. P., Rama, D. V., & Raghunandan, K. (1998). Audit committee composition and interaction with internal auditing: Canadian evidence. *Accounting Horizons*, *12* (1), 51.

Schein, E. H. (1991). *What is Culture*. Sage Publications.

Scott, W. G. (1961). Organization theory: an overview and an appraisal. *Academy of Management Journal*, *4*(1), 7-26.

Seago, J. (2015). *Delivering on the Promise: Measuring Internal Audit Value and Performance*. Common Body of Knowledge (CBOK)/IIA.

Selim, G., & McNamee, D. (1999). The risk management and internal auditing relationship: developing and validating a model. *International Journal of Auditing*, *3*(3), 159-174.

Smidts, A., Pruyn, A. T. H., & Van Riel, C. B. (2001). The impact of employee communication and perceived external prestige on organizational identification. *Academy of Management Journal*, *44*(5), 1051-1062.

Schminke, M., Ambrose, M. L., & Cropanzano, R. S. (2000). The effect of organizational structure on perceptions of procedural fairness. *Journal of Applied Psychology*, *85*(2), 294.

Schramm, W. (1954). How communication works. *The Process and Effects of Mass Communication*, 3-26.

Schuler, R. S. (1979). A role perception transactional process model for organizational communication-outcome relationships. *Organizational Behavior and Human Performance*, *23*(2), 268-291.

Shannon, C. E., & Weaver, W. (1949). *The Mathematical Theory of Communication*. University of Illinois Press.

Shapiro, S. P. (2005). Agency theory. *Annual Review of Sociology*, *31*.

Sherer, M., & Kent, D. (1983). *Auditing and Accountability*. Pitman.

Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, *52*(2), 737-783.

Smyth, J. D., Dillman, D. A., Christian, L. M., & McBride, M. (2009). Open-ended questions in web surveys: Can increasing the size of answer boxes and providing extra verbal instructions improve response quality?. *Public Opinion Quarterly*, *73*(2), 325-337.

Söhnchen, F. (2007). Common method variance und single source bias. In *Methodik der empirischen Forschung* (pp. 135-150). Gabler.

Soh, D. S., & Martinov-Bennie, N. (2011). The internal audit function: Perceptions of internal audit roles, effectiveness and evaluation. *Managerial Auditing Journal*, *26*(7), 605-622.

Soh, D. S., & Martinov-Bennie, N. (2015). Internal auditors' perceptions of their role in environmental, social and governance assurance and consulting. *Managerial Auditing Journal*, *30*(1), 80-111.

Spira, L. F., & Page, M. (2003). Risk management: The reinvention of internal control and the changing role of internal audit. *Accounting, Auditing & Accountability Journal*, *16*(4), 640-661.

Spraakman, G. (1997). Transaction cost economics: a theory for internal audit?. *Managerial Auditing Journal*, *12*(7), 323-330.

Stage, F. K., Carter, H. C., & Nora, A. (2004). Path analysis: An introduction and analysis of a decade of research. *The Journal of Educational Research*, *98*(1), 5-13.

Stewart, J., & Subramaniam, N. (2010). Internal audit independence and objectivity: emerging research opportunities. *Managerial Auditing Journal*, *25*(4), 328-360.

Strauss, A., & Corbin, J. (1994). *Grounded Theory Methodology*. Handbook of Qualitative Research, 17, 273-85.

Swiss Financial Market Supervisory Authority (FINMA) (2017). FINMA Circular 2017/1 – *Corporate Governance – Banks*. Bern.

Swiss Financial Market Supervisory Authority (FINMA) (2017). FINMA Circular 2017/2 – *Corporate Governance – Insurers*. Bern.

Taylor, F. W. (1911). *The Principles of Scientific Management.* Harper & Brothers.

Taylor, S. G., Bedeian, A. G., & Kluemper, D. H. (2012). Linking workplace incivility to citizenship performance: The combined effects of affective commitment and conscientiousness. *Journal of Organizational Behavior*, *33*(7), 878-893.

Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International Journal of Research in Marketing*, *12*(2), 137-155.

The Federal Assembly of the Swiss Confederation (2017). *Federal Act on the Amendment of the Swiss Civil Code (Part Five: The Code of Obligations)*. SR 220.

The Institute of Internal Auditors (IIA) (2010). *Practice Guide – Measuring Internal Audit Effectiveness and Efficiency.* Altamonte Springs.

The Institute of Internal Auditors (IIA) (2011). *Practice Guide – Interaction with the Board.* Altamonte Springs.

The Institute of Internal Auditors (IIA) (2013). *IIA Position Paper: The Three Lines of Defense in Effective Risk Management and Control*. Altamonte Springs.

The Institute of Internal Auditors (IIA) (2016). *Practice Guide – Internal Audit and the Second Line of Defense.* Altamonte Springs.

The Institute of Internal Auditors (IIA) (2017). *International Professional Practices Framework (IPPF)*. Altamonte Springs.

The Institute of Internal Auditors (IIA) (2018). *North American Pulse of Internal Audit Study.* Retrieved March 1, 2019 from: https://www.theiia.org/centers/aec/Pages/2018-Pulse-of-Internal-Audit.aspx.

The Institute of Internal Auditors Research Foundation (IIARF) (2003*). Internal Audit Reporting Relationships: Serving Two Masters*. Altamonte Springs.

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, *27*(2), 237-246.

Tomarken, A. J., & Waller, N. G. (2003). Potential problems with "well fitting" models. *Journal of Abnormal Psychology*, *112*(4), 578.

Trombetta, J. J., & Rogers, D. P. (1988). Communication climate, job satisfaction, and organizational commitment: The effects of information adequacy, communication openness, and decision participation. *Management Communication Quarterly*, *1*(4), 494-514.

Tsoukas, H. (1996). The firm as a distributed knowledge system: A constructionist approach. *Strategic Management Journal*, *17* (S2), 11-25.

Urban, D., & Mayerl, J. (2018). *Angewandte Regressionsanalyse: Theorie, Technik und Praxis*. Springer.

Vandenberghe, C., Bentein, K., & Stinglhamber, F. (2004). Affective commitment to the organization, supervisor, and work group: Antecedents and outcomes. *Journal of Vocational Behavior*, *64* (1), 47-71.

Van Den Hooff, B., & De Ridder, J. A. (2004). Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing. *Journal of Knowledge Management*, *8*(6), 117-130.

Van Peursem, K. A. (2005). Conversations with internal auditors: The power of ambiguity. *Managerial Auditing Journal*, *20*(5), 489-512.

VanVoorhis, C. W., & Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology*, *3*(2), 43-50.

Von Bertalanffy, L. (1968). *General System Theory*. New York, 41973 (1968), 40.

Walton, E. J. (2005). The persistence of bureaucracy: A meta-analysis of Weber's model of bureaucratic control. *Organization Studies*, *26*(4), 569-600.

Weber, M. (1946). Bureaucracy. From Max Weber: Essays in Sociology. *Public Administration Concepts and Cases*, 41-49.

Weiber, R., & Mühlhaus, D. (2014). *Strukturgleichungsmodellierung: Eine anwendungsorientierte Einführung in die Kausalanalyse mit Hilfe von AMOS, SmartPLS und SPSS*. Springer.

Welch, M., & Jackson, P. R. (2007). Rethinking internal communication: a stakeholder approach. *Corporate Communications: An International Journal*, *12*(2), 177-198.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171-180.

Widén-Wulff, G., & Ginman, M. (2004). Explaining knowledge sharing in organizations through the dimensions of social capital. *Journal of Information Science*, *30*(5), 448-458.

Wilkins, A. L., & Ouchi, W. G. (1983). Efficient cultures: Exploring the relationship between culture and organizational performance. *Administrative Science Quarterly*, 468-481.

Willem, A., & Buelens, M. (2009). Knowledge sharing in inter-unit cooperative episodes: The impact of organizational structure dimensions. *International Journal of Information Management*, *29*(2), 151-160.

Williamson, O. E. (1979). Transaction-cost economics: the governance of contractual relations. *The Journal of Law and Economics*, *22*(2), 233-261.

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-mediated Communication*, *10*(3), JCMC1034.

Wright, M. (Ed.). (2016). *Gower Handbook of Internal Communication*. CRC Press.

Xiangdong, W. (1997). Development trends and future prospects of internal audit. *Managerial Auditing Journal*, *12*(4/5), 200-204.

Yates, J., & Orlikowski, W. J. (1992). Genres of organizational communication: A structurational approach to studying communication and media. *Academy of Management Review*, *17*(2), 299-326.

Appendix

A.1 Survey Questionnaire

Internal Audit Communication Survey

Purpose:	The survey is part of a doctoral dissertation project that investigates the communication between the internal audit activity and the board of directors (which includes the audit committee) or senior management. If you have no or too little experience with communicating with the board (including the audit committee) or senior management, please forward this survey to others who do have sufficient insight into this kind of communication.
Anonymity:	Your full anonymity is preserved.
Confidentiality:	All data are treated strictly confidential.
Questions:	The survey consists of questions with predetermined answer possibilities as well as open questions. **It is very important that you respond to all questions**. If a question is not applicable, or if you cannot answer for another reason, please select "not applicable" (n/a).
Time:	The completion of this survey will take **approximately 30 minutes.**
Participation window:	The survey is open until June 30th, 2018.

Thank you in advance for your valuable contribution!
If you would like to be informed about the **results of this survey** after the conclusion of the doctoral dissertation project, please include your contact information on **the last page of the survey**, or contact me personally.

Contact:

Katharina Schramm

University of St. Gallen
Institute of Accounting, Control and Auditing (ACA-HSG)
Tigerbergstrasse 9
9000 St. Gallen
Phone: +41 71 224 76 33
Mail: katharina.schramm@unisg.ch

I General questions

I.1 Who does the internal audit activity in your organization report to *functionally, i.e. hierarchically*? (Only one answer, please)

☐	Board of Directors	☐	Audit Committee
☐	Chief Executive Officer (CEO)	☐	Chief Financial Officer (CFO)
☐	Chief Compliance Officer (CCO)	☐	Chief Risk Officer (CRO)
☐	Head of Legal/General Counsel	☐	Other:……...
☐	Not applicable (n/a)		

I.2 How frequently does the internal audit activity in your organization report *functionally*? (Only one answer, please)

☐	Weekly	☐	Biweekly
☐	Monthly	☐	Quarterly
☐	Semi-annually	☐	Annually
☐	Other:…….	☐	Not applicable (n/a)

I.3 Who does the internal audit activity in your organization report to *administratively*? (Only one answer, please)

☐	Board of Directors	☐	Audit Committee
☐	Chief Executive Officer (CEO)	☐	Chief Financial Officer (CFO)
☐	Chief Compliance Officer (CCO)	☐	Chief Risk Officer (CRO)
☐	Head of Legal/General Counsel	☐	Other:……...
☐	Not applicable (n/a)		

I.4 How frequently does the internal audit activity in your organization report *administratively*? (Only one answer, please)

☐	Weekly	☐	Biweekly
☐	Monthly	☐	Quarterly
☐	Semi-annually	☐	Annually
☐	Other:…….	☐	Not applicable (n/a)

I.5 *Board independence*: Please indicate the degree of your agreement with the following statements. If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Strongly disagree					Strongly agree	
	- - -	- -	-	+	++	+++	n.a.
The board consists of *non-executive members* who have *never been a member* of executive management.	☐	☐	☐	☐	☐	☐	☐
The board consists of *non-executive members* who have *not been a member* of executive management *for more than three years*.	☐	☐	☐	☐	☐	☐	☐
The members of the board have *no or only minor business interests* with the organization.	☐	☐	☐	☐	☐	☐	☐

I.6 Which aspects are the *most important aspects* that are commonly discussed **with the board**? If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Please indicate your answer in the box below)

I.7 Which aspects are the *most important aspects* that are commonly discussed **with senior management**? (Please indicate your answer in the box below)

I.8 According to your assessment, which are the most important criteria **for communication by/from the internal audit activity**? (Indicate maximally three answers, please)

Note: "Effective communication" is defined as "successful in producing a desired or intended result".

☐ Accuracy (free from errors)	☐ Objectivity (fair, unbiased)
☐ Clarity (easily understandable)	☐ Conciseness (short, precise)
☐ Constructiveness (helpful)	☐ Completeness (all information included)
☐ Timeliness (opportune)	☐ Other: ……

I.9 According to your assessment, which are the most important criteria **for communication by/from the board**? If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Indicate maximally three answers, please)

Note: "Effective communication" is defined as "successful in producing a desired or intended result".

☐ Accuracy (free from errors)	☐ Objectivity (fair, unbiased)
☐ Clarity (easily understandable)	☐ Conciseness (short, precise)
☐ Constructiveness (helpful)	☐ Completeness (all information included)
☐ Timeliness (opportune)	☐ Other: ……

I.10 According to your assessment, which are the most important criteria **for communication by/from senior management**? (Indicate maximally three answers, please)

Note: "Effective communication" is defined as "successful in producing a desired or intended result".

☐ Accuracy (free from errors)	☐ Objectivity (fair, unbiased)
☐ Clarity (easily understandable)	☐ Conciseness (short, precise)
☐ Constructiveness (helpful)	☐ Completeness (all information included)
☐ Timeliness (opportune)	☐ Other: ……

I.11 Which form of communication do you prefer? If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Informal communication (*ad hoc*, *unplanned*)	Formal communication (*official*, *planned*)	No preference	Not applicable (n.a.)
With the board	☐	☐	☐	☐
With senior management	☐	☐	☐	☐

I.12 Which two of the following *tools* do you prefer for communication **with the board**? If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Indicate the two best answers, please)

☐ Face-to-face, individual meetings	☐ Face-to-face, small group meetings
☐ Live video conferences/calls	☐ Live telephone conferences/calls
☐ Email	☐ Voicemail
☐ Other:……	☐ Not applicable (n.a.)

I.13 Which two of the following *tools* do you prefer for communication **with senior management**? (Indicate the two best answers, please)

☐ Face-to-face, individual meetings	☐ Face-to-face, small group meetings
☐ Live video conferences/calls	☐ Live telephone conferences/calls
☐ Email	☐ Voicemail
☐ Other:……	☐ Not applicable (n.a.)

I.14 How *satisfied* are you regarding the following communication-related aspects? If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Not at all satisfied					Very satisfied		
	- - -	- -	-	0	+	++	+++	n.a.
Frequency of communication (with the board)	☐	☐	☐	☐	☐	☐	☐	☐
Content of communication (with the board)	☐	☐	☐	☐	☐	☐	☐	☐

Quality of communication (with the board)	☐	☐	☐	☐	☐	☐	☐	☐
Frequency of communication (with senior management)	☐	☐	☐	☐	☐	☐	☐	☐
Content of communication (with senior management)	☐	☐	☐	☐	☐	☐	☐	☐
Quality of communication (with senior management)	☐	☐	☐	☐	☐	☐	☐	☐

II Theory of Planned Behavior

II.1 *Attitude*: Please indicate the degree of your agreement with the following statements. If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
We associate *positive experiences* with communication with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We think that effective communication with the board is *desirable*.	☐	☐	☐	☐	☐	☐	☐	☐
We *appreciate* effective communication with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We have a *positive opinion* towards communicating with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We associate *positive experiences* with communication with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
We think that effective communication with senior management is *desirable*.	☐	☐	☐	☐	☐	☐	☐	☐
We *appreciate* effective communication with senior senior management.	☐	☐	☐	☐	☐	☐	☐	☐
We have a *positive opinion* towards communicating with the board.	☐	☐	☐	☐	☐	☐	☐	☐

II.2 *Subjective norm:* Please indicate the degree of your agreement with the following statements. If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Strongly disagree - - -	- -	-	0	+	++	Strongly agree +++	n.a.
Organizatonal culture in my organization requires effective communication with the board.	☐	☐	☐	☐	☐	☐	☐	☐
The *social norms* in my organization require effective communication with the board.	☐	☐	☐	☐	☐	☐	☐	☐
Communicating effectively with the board is *considered necessary* in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
Other persons in my organization put high value on effective communication with the board.	☐	☐	☐	☐	☐	☐	☐	☐
Organizational culture in my organization requires communication with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
The *social norms* in my organization require effective communication with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
Communicating effectively with senior management is *considered necessary* in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
Other persons in my organization put high value on effective communication with senior management.	☐	☐	☐	☐	☐	☐	☐	☐

II.3 *Perceived behavioral control:* Please indicate the degree of your agreement with the following statements. If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Strongly disagree - - -	- -	-	0	+	++	Strongly agree +++	n.a.
We are *confident* to communicate with the board.	☐	☐	☐	☐	☐	☐	☐	☐

It is *easy* for us to communicate with the board.	☐	☐	☐	☐	☐	☐	☐	☐
The board is *accessible* for communication with the internal audit activity.	☐	☐	☐	☐	☐	☐	☐	☐
The internal audit activity has a *high degree of control* over how they communicate with the board.	☐	☐	☐	☐	☐	☐	☐	☐
The internal audit activity has a *high degree of control* over the outcome of their communication with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We are *confident* to communicate with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
It is *easy* for us to communicate with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
The board is *accessible* for communication with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
The internal audit activity has a *high degree of control* over how they communicate with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
The internal audit activity has a *high degree of control* over the outcome of their communication with senior management.	☐	☐	☐	☐	☐	☐	☐	☐

II.4 *Behavioral intention:* Please indicate the degree of your agreement with the following statements. If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
We are *determined* to communicate effectively with the board.	☐	☐	☐	☐	☐	☐	☐	☐
It is our *objective* to communicate effectively with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We *always attempt* to communicate effectively with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We *do anything we can* to communicate effectively with the board.	☐	☐	☐	☐	☐	☐	☐	☐
We are *determined* to communicate effectively with senior management.	☐	☐	☐	☐	☐	☐	☐	☐

It is our *objective* to communicate effectively with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
We *always attempt* to communicate effectively with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
We *do anything we can* to communicate effectively with senior management.	☐	☐	☐	☐	☐	☐	☐	☐

II.5 *Communication behavior:* Please indicate the degree of your agreement with the following statements. If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

II.5.1 *Communication behavior by the internal audit activity*

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
I am *satisfied* with the way the internal audit activity communicates with the board.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by the internal audit activity to the board usually *fulfills its objective*.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by the internal audit activity to the board is usually helpful in producing *desired outcomes*.	☐	☐	☐	☐	☐	☐	☐	☐
I *perceive* the communication by the internal audit activity to the board to be effective.	☐	☐	☐	☐	☐	☐	☐	☐
I am *satisfied* with the way the internal audit activity communicates with senior management.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by the internal audit ativity to senior management usually *fulfills its objective*.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by the internal audit activity to senior management is usually helpful in producing *desired outcomes*.	☐	☐	☐	☐	☐	☐	☐	☐
I *perceive* the communication by the internal audit activity to senior management to be effective.	☐	☐	☐	☐	☐	☐	☐	☐

II.5.2 *Communication behavior by the board and/or senior management*

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
I am *satisfied* with the way the board communicates with the internal audit activity.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by the board usually *fulfills its objective*.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by the board is usually helpful in producing *desired outcomes*.	☐	☐	☐	☐	☐	☐	☐	☐
I *perceive* the communication by the board to be effective.	☐	☐	☐	☐	☐	☐	☐	☐
I am *satisfied* with the way senior management communicates with the internal audit activity.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by senior management usually *fulfills its objective*.	☐	☐	☐	☐	☐	☐	☐	☐
The communication by senior management is usually helpful in producing *desired outcomes*.	☐	☐	☐	☐	☐	☐	☐	☐
I *perceive* the communication by senior management to be effective.	☐	☐	☐	☐	☐	☐	☐	☐

III Outcomes

III.1 *Affective commitment*: Please indicate the degree of your agreement with the following statements. (Only one answer per line, please)

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
I am *emotionally attached* to my organization.	☐	☐	☐	☐	☐	☐	☐	☐
I *identify* myself with my organization.	☐	☐	☐	☐	☐	☐	☐	☐
I am *engaged in* my organization.	☐	☐	☐	☐	☐	☐	☐	☐
I am *committed* to my organization.	☐	☐	☐	☐	☐	☐	☐	☐
I am *emotionally attached* to my work.	☐	☐	☐	☐	☐	☐	☐	☐
I *identify* myself with my work.	☐	☐	☐	☐	☐	☐	☐	☐
I am *engaged in* my work.	☐	☐	☐	☐	☐	☐	☐	☐
I am *committed* to my work.	☐	☐	☐	☐	☐	☐	☐	☐

III.2 *Internal audit performance:* How do you evaluate the performance of the internal audit activity in your organization regarding the following aspects? (Only one answer per line, please)

	Poor Performance						Excellent Performance	
	- - -	- -	-	0	+	++	+++	n.a.
Governance-related tasks	☐	☐	☐	☐	☐	☐	☐	☐
Risk management-related tasks	☐	☐	☐	☐	☐	☐	☐	☐
Control-related tasks	☐	☐	☐	☐	☐	☐	☐	☐
Assurance-related performance	☐	☐	☐	☐	☐	☐	☐	☐
Consulting-related performance	☐	☐	☐	☐	☐	☐	☐	☐
Overall performance	☐	☐	☐	☐	☐	☐	☐	☐

III.3 *Board and senior management performance*: How do you evaluate the performance of the board and senior management in your organization regarding the following aspects? If the internal audit activity in your organization reports to the audit committee, you may equate the audit committee with the board. (Only one answer per line, please)

	Poor performance						Excellent performance	
	- - -	- -	-	0	+	++	+++	n.a.
Strategy-related tasks (*board*)	☐	☐	☐	☐	☐	☐	☐	☐
Control-related tasks (*board*)	☐	☐	☐	☐	☐	☐	☐	☐
Overall performance (*board*)	☐	☐	☐	☐	☐	☐	☐	☐
Leadership-related tasks (*senior management*)	☐	☐	☐	☐	☐	☐	☐	☐
Monitoring-related tasks (*senior management*)	☐	☐	☐	☐	☐	☐	☐	☐
Overall performance (*senior management*)	☐	☐	☐	☐	☐	☐	☐	☐

III.4 *Governance effectiveness*: How do you evaluate the effectiveness of corporate governance of your organization? (Only one answer per line, please)

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
My organization fulfills its *sustainable company interests*.	☐	☐	☐	☐	☐	☐	☐	☐
Decision-making capability of the board is given.	☐	☐	☐	☐	☐	☐	☐	☐
Efficiency of the board is given.	☐	☐	☐	☐	☐	☐	☐	☐
Transparency is given.	☐	☐	☐	☐	☐	☐	☐	☐
Healthy *balance* of management and control is given.	☐	☐	☐	☐	☐	☐	☐	☐
I perceive corporate governance in my organization to be e*ffective*.	☐	☐	☐	☐	☐	☐	☐	☐

IV Open questions

IV.1 Constituents: Independent of any previous question, what do you personally think would effective communication between the internal audit activity and the board and senior management look like? (Please indicate your answer in the box below)

IV.2 Antecedents: Independent of any previous question, which do you personally think can be organizational or other conditions that would facilitate ("success factors") or impede ("barriers") effective communication between the internal audit activity and the board and senior management in your organization? (Please indicate your answer in the box below)

IV.3 Outcomes: Independent of any previous question, what do you personally think would be the main outcomes of effective communication between the internal audit activity and the board and senior management in your organization? (Please indicate your answer in the box below)

Note: Outcomes may for example include personal outcomes, outcomes for the board/senior management or outcomes for the organization as a whole.

IV.4 Current assessment: Independent of any previous question, what are your personal thoughts or feelings about the current status of the communication between the internal audit activity and the board and senior management? (Please indicate your answer in the box below)

V Demographic questions

V.1 Which *gender* do you have? (Only one answer, please)

☐ Male	☐ Female
☐ Not applicable (n/a)	

V.2 What is your *age*? (Only one answer, please)

☐ Younger than 20 years	☐ 20-30 years
☐ 30-40 years	☐ 40-50 years
☐ 50-60 years	☐ Older than 60 years
☐ Not applicable (n/a)	

V.3 Which *position* do you currently hold? (Only one answer, please)

☐ Head of Internal Audit	☐ Internal auditor
☐ Member of the board of directors	☐ Member of senior management
☐ Other:…….	☐ Not applicable (n/a)

V.4 How many years of *cumulative professional experience* do you have in the areas of internal auditing, governance, risk management or internal control? (Only one answer, please)

☐ Less than 1 year	☐ 1-5 years
☐ 6-10 years	☐ 11-15 years
☐ 16-20 years	☐ More than 20 years
☐ Other:	☐ Not applicable (n/a)

V.5 Do you have any of the below *professional certifications*? (Multiple answers are possible)

☐ Certified Internal Auditor (CIA)	☐ Certification in Control Self-Assessment (CCSA)
☐ Certified Fraud Examiner (CFE)	☐ Certified Financial Services Auditor (CFSA)
☐ Certified Informations Systems Auditor (CISA)	☐ Certification in Risk Management Assurance (CRMA)
☐ Other:	☐ Not applicable (n/a)

V.6 Is your organization a member of the *Institute of Internal Auditors Switzerland* (IIAS; SVIR) or any other national representation of the *Institute of Internal Auditors* (IIA)? (Only one answer, please)

☐ Yes	☐ No

V.7 In which *country* is your organization based? (Please indicate your answer in the box below)

V.8 Which *category of industries* does your organization fall into? (Only one answer, please)

☐ Communication	☐ Construction
☐ Consumer goods	☐ Energy, oil and gas
☐ Financial services	☐ Healthcare
☐ Insurance services	☐ Manufacturing
☐ Other services	☐ Pharmaceuticals
☐ Technology	☐ Trade
☐ Transportation	☐ Other:……
☐ Not applicable (n/a)	

V.9 Which *category of earnings* of the last fiscal year does your organization fall into? (Only one answer, please)

In CHF	
☐ ≤ 50 million	☐ 1,001–2,500 million
☐ 51–250 million	☐ 2,501–5,000 million
☐ 251–500 million	☐ 5,001–10,000 million
☐ 500–1,000 million	☐ > 10,000 million
☐ Not applicable (n/a)	

V.10 How many *employees* does your organization have globally (in full-time equivalents)? (Only one answer, please)

☐ ≤ 100	☐ 10,001–20,000
☐ 101–1,000	☐ 20,001–40,000
☐ 1,001–5,000	☐ 40,001–80,000
☐ 50,001–10,000	☐ > 80,000
☐ Not applicable (n/a)	

V.11 How many *internal auditors* does the internal audit activity in your organization have globally (in full-time equivalents)? (Please indicate your answer in the box below)

V.12 (Second last question) *Organizational structure*: Please indicate the degree of your agreement with the following statements. (Only one answer per line, please)

	Strongly Disagree						Strongly Agree	
	- - -	- -	-	0	+	++	+++	n.a.
Processes are *formalized* in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
Authority is *centralized*.	☐	☐	☐	☐	☐	☐	☐	☐
Tasks are *specilialized*.	☐	☐	☐	☐	☐	☐	☐	☐
Many employees report to one superior.	☐	☐	☐	☐	☐	☐	☐	☐

V.13 (Last question) *Organizational culture*: Please indicate the degree of your agreement with the following statements. (Only one answer per line, please)

	Strongly disagree						Strongly agree	
	- - -	- -	-	0	+	++	+++	n.a.
Internal collaboration is an important aspect of organizational culture in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
Creation and creativity are important aspects of organizational culture in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
Internal control is an important aspect of organizational culture in my oranization .	☐	☐	☐	☐	☐	☐	☐	☐
Market competition and profitability are important aspects of organizational culture in my organization.	☐	☐	☐	☐	☐	☐	☐	☐
The organizational culture in my organization supports the *mandate of the internal audit activity.*	☐	☐	☐	☐	☐	☐	☐	☐

VI Questions and remarks

VI.1 Do you have questions, remarks, or additions? (Please indicate so in the box below)

VI.2 If you would like to be informed about the results of this survey after the conclusion of the doctoral dissertation project, please include your contact information in the above field, or contact me personally.

Contact:
Katharina Schramm
University of St. Gallen
Institute of Accounting, Control and Auditing (ACA-HSG)
Tigerbergstrasse 9
9000 St. Gallen

Phone: +41 71 224 76 33
Email: katharina.schramm@unisg.ch

Thank you for your valuable contribution!
If possible, please forward this survey to other members of internal audit in your organization who have insight into communication between the internal audit activity and the board and senior management.

A.2 Descriptive statistics and correlations for BIB as the dependent variable

		Mean	SD	1	2	3	4
1	BIB	6.317	0.92208	1			
2	AttB	6.569	0.5938	.318**	1		
3	SNB	5.676	1.2253	.340**	.234*	1	
4	PBCB	5.645	1.18244	.364**	.264**	.592**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Listwise N=108

A.3 Bootstrap results for BIB as the dependent variable

Model		B	Bootstrap[a]				
			Bias	SE	Sig.	BCa 95% CI	
						Lower	Upper
1	(Constant)	2.411	-0.046	1.112	0.044	0.152	4.360
	AttB	0.349	-0.004	0.163	0.045	0.050	0.662
	SNB	0.125	0.009	0.092	0.187	-0.070	0.346
	PBCB	0.161	0.003	0.127	0.221	-0.072	0.423

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.4 Descriptive statistics and correlations for BIM as the dependent variable

		Mean	SD	1	2	3	4	5	6	7
1	BIM	6.3005	0.79041	1						
2	SpanContr	5.11	1.480	.165*						
3	Control	5.15	1.290	.333**	0.079	1				
4	Supportive_Cult	5.46	1.280	.272**	-0.012	.710**	1			
5	AttM	6.3761	0.63683	0.166	0.031	.304**	.350**	1		
6	SNM	5.9817	0.97759	.365**	-0.047	.450**	.504**	.552**	1	
7	PBCM	5.7324	0.99678	.262**	-0.041	.464**	.628**	.328**	.471**	1

**. Correlation is significant at the 0.01 level (2-tailed).

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

Listwise N=109

A.5 Bootstrap results for BIM as the dependent variable

Model		B	Bootstrap[a]				
			Bias	SE	Sig.	BCa 95% CI	
						Lower	Upper
1	(Constant)	5.849	0.004	0.349	0.000	5.057	6.491
	SpanContr	0.088	-0.001	0.062	0.161	-0.018	0.211
2	(Constant)	4.783	0.030	0.508	0.000	3.723	5.832
	SpanContr	0.078	0.001	0.067	0.268	-0.036	0.216
	Control	0.157	-0.010	0.117	0.186	-0.064	0.353
	Supportive_Cult	0.056	0.004	0.078	0.475	-0.088	0.232
3	(Constant)	4.128	-0.064	0.729	0.000	2.679	5.328
	SpanContr	0.091	0.001	0.065	0.182	-0.021	0.229
	Control	0.123	-0.010	0.132	0.401	-0.120	0.353
	Supportive_Cult	-0.033	-0.002	0.079	0.682	-0.191	0.118
	AttM	-0.105	0.008	0.148	0.485	-0.407	0.224
	SNM	0.254	0.006	0.130	0.057	-0.012	0.536
	PBCM	0.070	0.006	0.090	0.444	-0.080	0.278

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.6 Descriptive statistics and correlations for Comeff_IAB as the dependent variable

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	ComEff_IAB	5.636	1.168	1											
2	Revenue	5.36	2.111	-.077*	1										
3	Special	5.62	1.037	.271**	-0.089	1									
4	Collab	5.87	1.226	.262**	0.097	.361**	1								
5	Creation	5.39	1.300	.352**	-0.064	.212*	.628**	1							
6	Control	5.15	1.304	.370**	-0.083	.209*	.440**	.325**	1						
7	Compet	5.93	1.296	.205*	0.043	.253*	.290**	0.174	.206*	1					
8	Supportive_Cult	5.46	1.296	.497**	-0.033	.233*	.540**	.484**	.724**	.245*	1				
9	AttB	6.591	0.586	.226*	0.158	-0.018	-0.054	-0.027	.262**	-0.159	0.105	1			
10	SNB	5.657	1.261	.558**	0.078	.249*	.426**	.320**	.351**	.213*	.414**	.212*	1		
11	PBCB	5.660	1.208	.816**	-0.086	0.160	.393**	.472**	.513**	0.140	.551**	.251*	.611**	1	
12	BIB	6.347	0.923	.321**	.200*	0.005	0.020	-0.087	.258**	-0.067	0.157	.280**	.347**	.358**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed)
Listwise N=99

A.7 Bootstrap results for Comeff_IAB as the dependent variable

Model		B	Bootstrap[a]				
			Bias	SE	Sig.	BCa 95% CI	
						Lower	Upper
1	(Constant)	5.865	0.005	0.333	0.000	5.162	6.533
	Revenue	-0.043	-0.001	0.061	0.489	-0.162	0.077
2	(Constant)	4.110	0.054	1.009	0.000	2.121	6.247
	Revenue	-0.030	0.002	0.059	0.616	-0.147	0.092
	Special	0.300	-0.010	0.159	0.068	-0.013	0.577
3	(Constant)	2.061	0.271	1.276	0.107	-0.283	5.715
	Revenue	-0.009	0.005	0.056	0.873	-0.121	0.118
	Special	0.194	-0.011	0.137	0.158	-0.044	0.424
	Collab	-0.181	-0.007	0.158	0.254	-0.492	0.121
	Creation	0.188	-0.026	0.132	0.167	-0.066	0.364
	Control	0.027	0.019	0.159	0.873	-0.273	0.405
	Compet	0.066	-0.010	0.125	0.599	-0.155	0.278
	Supportive_Cult	0.377	-0.015	0.149	0.014	0.083	0.628
4	(Constant)	-0.511	-0.084	1.118	0.649	-2.568	1.455
	Revenue	-0.009	-0.004	0.036	0.814	-0.069	0.048
	Special	0.184	0.000	0.071	0.012	0.063	0.322
	Collab	-0.164	0.014	0.086	0.059	-0.340	0.073
	Creation	-0.007	-0.010	0.088	0.940	-0.181	0.129
	Control	-0.185	-0.011	0.096	0.059	-0.351	-0.031
	Compet	0.085	-0.005	0.068	0.207	-0.033	0.201
	Supportive_Cult	0.200	0.001	0.088	0.026	0.019	0.377
	AttB	0.101	0.000	0.159	0.526	-0.174	0.416
	SNB	0.057	0.001	0.073	0.420	-0.067	0.215
	PBCB	0.739	-0.019	0.091	0.000	0.569	0.856
	BIB	0.053	0.040	0.150	0.701	-0.122	0.427

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.8 Descriptive statistics and correlations for Comeff_IAM as the dependent variable

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1	ComEff_IAM	5.5436	1.202	1										
2	Employees	4.44	1.946	-.212*	1									
3	Formal	5.52	1.214	.251**	0.113	1								
4	Collab	5.89	1.181	.207*	0.054	.247**	1							
5	Creation	5.41	1.278	.338**	-0.059	0.015	.613**	1						
6	Control	5.14	1.280	.485**	-0.065	.424**	.414**	.327**	1					
7	Supportive_Cult	5.47	1.281	.588**	-0.121	.401**	.506**	.447**	.723**	1				
8	AttM	6.3792	0.639	.279**	0.160	.215*	.219*	.192*	.305**	.354**	1			
9	SNM	5.9839	0.978	.362**	0.145	.376**	.421**	.270**	.455**	.505**	.552**	1		
10	PBCM	5.7393	0.999	.560**	-0.152	0.166	0.180	.374**	.471**	.629**	.333**	.472**	1	
11	BIM	6.3005	0.790	.274**	-0.022	0.088	0.172	0.066	.329**	.278**	0.170	.367**	.267**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Listwise N=109

A.9 Bootstrap results for Comeff_IAM as the dependent variable

Model		B	Bootstrap[a]				
			Bias	SE	Sig.	BCa 95% CI	
						Lower	Upper
1	(Constant)	6.126	-0.006	0.274	0.000	5.580	6.645
	Employees	-0.131	0.002	0.065	0.052	-0.264	0.001
2	(Constant)	4.690	-0.008	0.610	0.000	3.472	5.858
	Employees	-0.151	0.001	0.066	0.028	-0.284	-0.021
	Formal	0.276	0.001	0.100	0.008	0.088	0.473
3	(Constant)	2.722	-0.006	0.636	0.000	1.566	3.954
	Employees	-0.081	0.002	0.057	0.161	-0.202	0.035
	Formal	0.076	0.003	0.086	0.378	-0.092	0.262
	Collab	-0.232	0.010	0.106	0.033	-0.454	0.019
	Creation	0.205	-0.007	0.104	0.050	0.007	0.389
	Control	0.123	-0.007	0.136	0.367	-0.119	0.363
	Supportive_Cult	0.436	-0.001	0.144	0.002	0.126	0.710
4	(Constant)	0.430	0.094	1.546	0.776	-2.459	3.848
	Employees	-0.087	0.007	0.060	0.181	-0.221	0.047
	Formal	0.090	0.003	0.085	0.297	-0.067	0.272
	Collab	-0.177	0.007	0.109	0.117	-0.430	0.059
	Creation	0.163	-0.010	0.124	0.206	-0.059	0.373
	Control	0.074	-0.013	0.150	0.635	-0.173	0.326
	Supportive_Cult	0.278	-0.001	0.130	0.036	0.020	0.527
	AttM	0.110	-0.016	0.167	0.511	-0.204	0.389
	SNM	0.026	-0.003	0.113	0.809	-0.206	0.239
	PBCM	0.254	0.009	0.180	0.180	-0.135	0.616
	BIM	0.149	0.004	0.150	0.298	-0.095	0.456

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.10 Descriptive statistics and correlations for AffCommitment1 as the dependent variable

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	AffCommitment1	6.266	0.862	1											
2	Age	4.14	0.912	.228*	1										
3	IIAMember	0.82	0.383	0.174	0.098	1									
4	Special	5.57	1.086	.286**	0.070	.196*	1								
5	Collab	5.91	1.203	.433**	0.128	.202*	.342**	1							
6	Creation	5.44	1.286	.470**	0.193	0.019	.216*	.614**	1						
7	Control	5.15	1.246	0.181	0.095	.283**	.216*	.398**	.299**	1					
8	Supportive_Cult	5.47	1.295	.386**	0.188	.309**	.244*	.497**	.439**	.711**	1				
9	ComEff_BIA	5.458	1.203	.390**	0.113	.231*	.229*	.365**	.431**	.420**	.491**	1			
10	ComEff_MIA	5.413	1.155	.421**	.252*	0.105	.197*	.329**	.473**	.530**	.689**	.615**	1		
11	Perf_IA	5.698	0.907	.202*	0.113	.199*	0.044	0.172	.207*	.375**	.473**	.476**	.373**	1	
12	Goveff	5.588	1.098	.364**	-0.027	0.120	.232*	.287**	.365**	.479**	.385**	.510**	.507**	.270**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Listwise N=102

A.11 Bootstrap results for AffCommitment1 as the dependent variable

Model		B	Bootstrap[a]				
			Bias	SE	Sig.	BCa 95% CI	
						Lower	Upper
1	(Constant)	5.151	0.012	0.510	0.000	4.069	6.143
	Age	0.201	-0.004	0.088	0.028	0.037	0.359
	IIAMember	0.344	0.003	0.305	0.266	-0.175	0.950
2	(Constant)	4.178	0.046	0.884	0.000	2.413	6.028
	Age	0.189	0.000	0.085	0.031	0.022	0.354
	IIAMember	0.236	-0.017	0.258	0.371	-0.211	0.685
	Special	0.200	-0.006	0.122	0.120	-0.021	0.422
3	(Constant)	3.267	0.060	0.814	0.000	1.733	5.128
	Age	0.103	0.006	0.079	0.202	-0.059	0.273
	IIAMember	0.182	-0.017	0.235	0.449	-0.250	0.590
	Special	0.108	-0.007	0.088	0.222	-0.050	0.263
	Collab	0.096	0.001	0.104	0.356	-0.127	0.295
	Creation	0.189	-0.019	0.104	0.082	-0.002	0.340
	Control	-0.143	0.017	0.093	0.128	-0.336	0.100
	Supportive_Cult	0.176	-0.003	0.098	0.072	-0.029	0.353
4	(Constant)	2.984	0.129	0.849	0.001	1.360	5.112
	Age	0.084	0.001	0.078	0.295	-0.069	0.238
	IIAMember	0.197	-0.022	0.238	0.417	-0.244	0.597
	Special	0.096	-0.013	0.089	0.286	-0.054	0.227
	Collab	0.122	0.004	0.103	0.240	-0.106	0.331
	Creation	0.135	-0.020	0.091	0.163	-0.030	0.257
	Control	-0.169	0.023	0.089	0.066	-0.359	0.092
	Supportive_Cult	0.088	-0.003	0.110	0.416	-0.118	0.294
	Comeff_BIA	0.075	-0.010	0.105	0.472	-0.122	0.244
	Comeff_MIA	0.141	0.000	0.123	0.252	-0.099	0.385
5	(Constant)	2.616	0.122	0.863	0.003	0.970	4.710
	Age	0.114	0.002	0.079	0.162	-0.041	0.273
	IIAMember	0.194	-0.032	0.233	0.408	-0.228	0.552
	Special	0.082	-0.012	0.089	0.357	-0.066	0.216
	Collab	0.126	0.004	0.101	0.218	-0.095	0.331
	Creation	0.115	-0.021	0.090	0.220	-0.044	0.226
	Control	-0.219	0.029	0.091	0.021	-0.424	0.077
	Supportive_Cult	0.118	-0.008	0.104	0.250	-0.072	0.292
	Comeff_BIA	0.037	-0.014	0.101	0.709	-0.142	0.186
	Comeff_MIA	0.095	-0.001	0.122	0.435	-0.141	0.332
	Perf_IA	0.007	0.015	0.112	0.953	-0.224	0.291
	Goveff	0.165	-0.010	0.094	0.076	0.006	0.315

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.12 Descriptive statistics and correlations for AffCommitment2 as the dependent variable

		Mean	SD	1	2	3	4	5
1	AffCommitment2	5.879	1.111	1				
2	IIAMember	0.82	0.384	.270**	1			
3	Comeff_BIA	5.447	1.221	0.147	.226*	1		
4	Comeff_MIA	5.422	1.171	0.040	0.105	.629**	1	
5	Perf_IA	5.679	0.906	.348**	.208*	.493**	.389**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Listwise N=107

A.13 Bootstrap results for AffCommitment2 as the dependent variable

Model		B	Bootstrap[a]				
			Bias	SE	Sig.	BCa 95% CI	
						Lower	Upper
1	(Constant)	5.237	-0.001	0.333	0.000	4.567	5.869
	IIAMember	0.780	0.001	0.350	0.030	0.102	1.493
2	(Constant)	4.984	-0.016	0.655	0.000	3.648	6.206
	IIAMember	0.713	-0.005	0.360	0.050	0.022	1.415
	Comeff_BIA	0.124	0.001	0.150	0.404	-0.174	0.413
	Comeff_MIA	-0.068	0.003	0.124	0.585	-0.330	0.181
3	(Constant)	3.549	-0.068	0.929	0.000	1.712	5.127
	IIAMember	0.605	-0.008	0.337	0.074	-0.036	1.259
	Comeff_BIA	0.003	-0.003	0.134	0.983	-0.249	0.257
	Comeff_MIA	-0.114	0.001	0.111	0.304	-0.336	0.104
	Perf_IA	0.428	0.015	0.180	0.017	0.112	0.845

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.14 Descriptive statistics and correlations for AffCommitment3 as the dependent variable

		Mean	SD	1	2	3	4	5	6
1	AffCommitment3	6.552	0.565	1					
2	Age	4.13	0.906	.210*	1				
3	Supportive_Cult	5.45	1.296	.202*	.192*	1			
4	Comeff_BIA	5.454	1.225	0.059	0.134	.509**	1		
5	Comeff_MIA	5.405	1.183	0.141	.264**	.697**	.644**	1	
6	Perf_IA	5.673	0.926	.277**	0.146	.483**	.500**	.406**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Listwise N=106

A.15 Bootstrap results for AffCommitment3 as the dependent variable

Bootstrap for Coefficients							
Model		**B**	**Bootstrap[a]**				
			Bias	**SE**	**Sig.**	**BCa 95% CI**	
						Lower	**Upper**
1	(Constant)	6.011	0.001	0.258	0.000	5.524	6.519
	Age	0.131	0.000	0.059	0.030	0.011	0.249
2	(Constant)	5.695	-0.004	0.365	0.000	4.965	6.391
	Age	0.111	0.000	0.057	0.055	-0.009	0.220
	Supportive_Cult	0.073	0.001	0.047	0.120	-0.011	0.168
3	(Constant)	5.781	-0.013	0.341	0.000	5.088	6.392
	Age	0.113	-0.001	0.058	0.058	-0.010	0.223
	Supportive_Cult	0.090	-0.001	0.065	0.161	-0.030	0.216
	Comeff_BIA	0.030	0.003	0.065	0.642	-0.158	0.115
	Comeff_MIA	0.005	0.001	0.076	0.950	-0.142	0.153
4	(Constant)	5.282	-0.049	0.469	0.000	4.357	6.039
	Age	0.104	0.003	0.057	0.076	-0.023	0.221
	Supportive_Cult	0.048	0.000	0.065	0.456	-0.077	0.171
	Comeff_BIA	0.078	0.002	0.068	0.252	-0.202	0.068
	Comeff_MIA	0.007	-0.002	0.072	0.916	-0.124	0.146
	Perf_IA	0.169	0.006	0.084	0.045	0.019	0.357

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.16 Descriptive statistics and correlations for Perf_IA as the dependent variable

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Perf_IA	5.682	0.922	1													
2	Certification	0.544	0.501	.116	1												
3	Creation	5.456	1.282	.189*	-.131	1											
4	Control	5.165	1.237	.361**	-.115	.298**	1										
5	Supportive_Cult	5.466	1.290	.472**	-.153	.440**	.719**	1									
6	ComEff_BIA	5.459	1.179	.486**	-.132	.418**	.398**	.508**	1								
7	ComEff_MIA	5.436	1.116	.381**	-.114	.473**	.526**	.727**	.583**	1							
8	AffCom.1	6.267	0.855	.200*	-.117	.463**	0.168	.390**	.383**	.405**	1						
9	AffCom.2	5.908	1.093	.322**	0.110	0.170	-.007	0.034	0.153	0.045	.354**	1					
10	AffCom.3	6.549	0.571	.287**	0.113	0.144	0.100	.202*	0.061	0.166	.387**	.486**	1				
11	BI	4.324	2.096	.243*	0.134	0.123	.221*	.208*	.298**	0.136	-.068	0.127	.200*	1			
12	Perf_B	5.364	1.211	.502**	-.090	.481**	.485**	.541**	.623**	.607**	.388**	0.145	0.151	.229*	1		
13	Perf_M	5.227	1.203	.354**	-.076	.509**	.570**	.620**	.450**	.736**	.371**	0.038	.212*	0.127	.758**	1	
14	Goveff	5.621	1.049	.246*	-.015	.370**	.472**	.411**	.463**	.456**	.348**	0.100	0.072	.224*	.743**	.576**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Listwise N=103

A.17 Bootstrap results for Perf_IA as the dependent variable

Bootstrap for Coefficients							
Model		**B**	**Bootstrap[a]**				
			Bias	**SE**	**Sig.**	**BCa 95% CI**	
						Lower	**Upper**
1	(Constant)	5.566	0.000	0.124	0.000	5.305	5.799
	Certification	0.213	0.000	0.179	0.236	-0.139	0.569
2	(Constant)	3.497	0.034	0.500	0.000	2.506	4.596
	Certification	0.355	0.001	0.151	0.025	0.054	0.662
	Creation	-0.005	0.000	0.086	0.953	-0.169	0.161
	Control	0.034	0.007	0.091	0.693	-0.141	0.241
	Supportive_Cult	0.337	-0.013	0.119	0.006	0.112	0.524
3	(Constant)	2.900	0.007	0.583	0.000	1.622	4.050
	Certification	0.384	-0.001	0.146	0.014	0.107	0.669
	Creation	-0.063	0.001	0.083	0.446	-0.233	0.104
	Control	0.013	0.011	0.094	0.884	-0.166	0.236
	Supportive_Cult	0.273	-0.021	0.138	0.061	0.031	0.472
	Comeff_BIA	0.304	-0.002	0.087	0.001	0.131	0.471
	Comeff_MIA	-0.055	0.011	0.115	0.620	-0.273	0.212
4	(Constant)	1.371	0.050	0.886	0.129	-0.415	3.274
	Certification	0.276	0.003	0.145	0.065	-0.005	0.581
	Creation	-0.068	0.001	0.075	0.368	-0.221	0.079
	Control	0.006	0.009	0.088	0.945	-0.168	0.207
	Supportive_Cult	0.280	-0.022	0.126	0.034	0.062	0.455
	Comeff_BIA	0.297	-0.009	0.074	0.001	0.154	0.416
	Comeff_MIA	-0.028	0.013	0.102	0.770	-0.235	0.219
	AffCommitment1	-0.174	0.015	0.101	0.076	-0.362	0.094
	AffCommitment2	0.208	-0.016	0.085	0.016	0.048	0.319
	AffCommitment3	0.209	-0.001	0.147	0.160	-0.072	0.498
5	(Constant)	1.861	0.061	0.945	0.050	0.012	3.922
	Certification	0.316	0.022	0.146	0.036	0.019	0.687
	Creation	-0.089	-0.002	0.067	0.186	-0.225	0.035
	Control	0.034	0.007	0.073	0.642	-0.109	0.208
	Supportive_Cult	0.252	-0.019	0.107	0.027	0.064	0.400
	Comeff_BIA	0.204	0.005	0.096	0.034	0.018	0.418
	Comeff_MIA	-0.046	0.022	0.121	0.705	-0.296	0.275
	AffCommitment1	-0.153	0.018	0.102	0.124	-0.367	0.121
	AffCommitment2	0.190	-0.010	0.084	0.025	0.014	0.315
	AffCommitment3	0.189	-0.012	0.161	0.237	-0.135	0.472
	BI	-0.012	0.000	0.044	0.791	-0.090	0.079
	Perf_B	0.414	-0.019	0.128	0.004	0.183	0.598
	Perf_M	-0.093	0.006	0.120	0.416	-0.346	0.151
	Goveff	-0.244	-0.007	0.107	0.023	-0.458	-0.063

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.18 Descriptive statistics and correlations for Perf_B as the dependent variable

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Perf_B	5.361	1.216	1												
2 Formal	5.500	1.233	0.178	1											
3 Special	5.539	1.087	.253*	.314**	1										
4 Collab	5.902	1.198	.372**	.248*	.337**	1									
5 Creation	5.441	1.279	.481**	0.041	.198*	.623**	1								
6 Control	5.176	1.238	.490**	.480**	.238*	.412**	.313**	1							
7 Compet	5.833	1.401	.268**	0.095	.261**	.267**	.196*	.228*	1						
8 Supportive_Cult	5.480	1.288	.548**	.427**	.266**	.499**	.459**	.716**	.226*	1					
9 ComEff_IAB	5.561	1.230	.746**	0.092	.216*	.256**	.376**	.388**	0.148	.460**	1				
10 BI	4.346	2.093	.233*	0.071	0.046	0.145	0.138	.213*	-0.025	.198*	.309**	1			
11 Perf_IA	5.677	0.926	.501**	0.189	0.069	0.173	0.184	.368**	0.077	.482**	.560**	.251*	1		
12 Perf_M	5.222	1.208	.758**	.346**	0.177	.444**	.508**	.576**	0.186	.629**	.462**	0.132	.352**	1	
13 Goveff	5.627	1.052	.746**	0.176	.255**	.328**	.381**	.469**	.337**	.407**	.606**	.219*	.249*	.580**	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
Listwise N=102

A.19 Bootstrap results for Perf_B as the dependent variable

Bootstrap for Coefficients							
Model		**B**	**Bootstrap[a]**				
			Bias	**SE**	**Sig.**	**BCa 95% CI**	
						Lower	**Upper**
1	(Constant)	3.413	0.016	0.871	0.001	1.395	5.142
	Formal	0.108	0.008	0.136	0.436	-0.161	0.386
	Special	0.245	-0.010	0.157	0.131	-0.079	0.514
2	(Constant)	1.070	0.042	0.841	0.195	-0.633	2.884
	Formal	-0.077	0.015	0.105	0.462	-0.274	0.181
	Special	0.105	-0.001	0.104	0.304	-0.123	0.309
	Collab	-0.087	-0.003	0.135	0.501	-0.369	0.162
	Creation	0.288	-0.007	0.107	0.008	0.087	0.471
	Control	0.221	0.008	0.152	0.152	-0.066	0.548
	Compet	0.088	-0.001	0.086	0.303	-0.079	0.249
	Supportive_Cult	0.261	-0.017	0.160	0.106	-0.065	0.516
3	(Constant)	-0.361	-0.078	0.658	0.563	-1.647	0.673
	Formal	0.007	0.003	0.097	0.941	-0.168	0.209
	Special	0.020	0.012	0.083	0.810	-0.157	0.225
	Collab	-0.010	0.005	0.095	0.911	-0.225	0.186
	Creation	0.158	0.002	0.066	0.018	0.032	0.294
	Control	0.117	0.002	0.105	0.259	-0.066	0.336
	Compet	0.086	0.002	0.065	0.180	-0.055	0.215
	Supportive_Cult	0.090	-0.003	0.101	0.358	-0.128	0.278
	Comeff_IAB	0.571	-0.007	0.085	0.000	0.402	0.711
4	(Constant)	-1.344	0.159	0.689	0.048	-2.622	0.469
	Formal	-0.067	0.005	0.063	0.284	-0.187	0.070
	Special	0.062	-0.004	0.072	0.381	-0.078	0.194
	Collab	-0.024	-0.016	0.075	0.746	-0.167	0.076
	Creation	0.027	-0.003	0.059	0.650	-0.088	0.133
	Control	-0.041	0.009	0.070	0.557	-0.169	0.130
	Compet	0.037	-0.005	0.049	0.459	-0.054	0.117
	Supportive_Cult	-0.015	-0.004	0.072	0.827	-0.150	0.115
	Comeff_IAB	0.303	-0.014	0.073	0.000	0.180	0.400
	BI	0.000	0.002	0.029	0.988	-0.057	0.065
	Perf_IA	0.172	-0.011	0.093	0.076	0.012	0.321
	Perf_M	0.449	0.021	0.092	0.000	0.267	0.703
	Goveff	0.318	-0.004	0.092	0.001	0.148	0.482

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.20 Descriptive statistics and correlations for Perf_M as the dependent variable

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1 Perf M	5.231	1.198	1									
2 Formal	5.510	1.223	.348**	1								
3 Collab	5.904	1.187	.444**	.248*	1							
4 Creation	5.452	1.276	.507**	0.044	.619**	1						
5 Control	5.173	1.234	.570**	.475**	.409**	.295**	1					
6 Supportive_Cult	5.471	1.284	.621**	.421**	.495**	.437**	.720**	1				
7 ComEff_IAM	5.541	1.178	.623**	.272**	0.185	.325**	.441**	.568**	1			
8 Perf_IA	5.681	0.918	.353**	0.190	0.173	0.188	.360**	.472**	.578**	1		
9 Perf_B	5.367	1.205	.758**	0.179	.372**	.479**	.486**	.542**	.631**	.501**	1	
10 Goveff	5.625	1.045	.577**	0.174	.327**	.369**	.473**	.412**	.476**	.245*	.744**	1

**. Correlation is significant at the 0.01 level (2-tailed).

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

Listwise N=104

A.21 Bootstrap results for Perf_M as the dependent variable

Bootstrap for Coefficients							
			Bootstrap[a]				
						BCa 95% CI	
Model		B	Bias	SE	Sig.	Lower	Upper
1	(Constant)	3.355	-0.028	0.624	0.000	2.102	4.458
	Formal	0.341	0.004	0.105	0.002	0.140	0.566
2	(Constant)	0.501	-0.045	0.746	0.504	-0.863	1.887
	Formal	0.110	0.001	0.091	0.231	-0.060	0.291
	Collab	-0.013	0.016	0.129	0.914	-0.266	0.307
	Creation	0.303	-0.006	0.089	0.001	0.124	0.454
	Control	0.224	-0.007	0.113	0.046	0.024	0.423
	Supportive_Cult	0.254	0.003	0.117	0.032	-0.008	0.491
3	(Constant)	-0.460	-0.029	0.666	0.492	-1.669	0.788
	Formal	0.082	-0.002	0.089	0.358	-0.081	0.251
	Collab	0.086	0.011	0.107	0.409	-0.122	0.340
	Creation	0.219	-0.005	0.085	0.013	0.053	0.368
	Control	0.196	-0.004	0.101	0.051	0.018	0.378
	Supportive_Cult	0.080	0.004	0.106	0.436	-0.157	0.295
	Comeff_IAM	0.377	-0.001	0.111	0.001	0.173	0.601
4	(Constant)	0.178	-0.154	0.830	0.837	-1.358	1.364
	Formal	0.115	-0.008	0.073	0.130	-0.010	0.230
	Collab	0.057	0.012	0.106	0.593	-0.146	0.303
	Creation	0.105	0.001	0.070	0.149	-0.030	0.246
	Control	0.119	-0.017	0.100	0.255	-0.058	0.262
	Supportive_Cult	0.085	0.002	0.112	0.445	-0.152	0.310
	Comeff_IAM	0.229	-0.014	0.134	0.099	0.006	0.449
	Perf_IA	-0.233	0.026	0.136	0.108	-0.527	0.109
	Perf_B	0.555	0.016	0.117	0.000	0.294	0.839
	Goveff	-0.089	0.007	0.111	0.436	-0.329	0.149

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.22 Descriptive statistics and correlations for Goveff as the dependent variable

		Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Goveff	5.627	1.052	1														
2	Formal	5.500	1.233	0.176	1													
3	Special	5.539	1.087	.255**	.314**	1												
4	Collab	5.902	1.198	.328**	.248*	.337**	1											
5	Creation	5.441	1.279	.381**	0.041	.198*	.623**	1										
6	Control	5.176	1.238	.469**	.480**	.238*	.412**	.313**	1									
7	Compet	5.833	1.401	.337**	0.095	.261**	.267**	.196*	.228*	1								
8	Supportive_Cult	5.480	1.288	.407**	.427**	.266**	.499**	.459**	.716**	.226*	1							
9	ComEff_IAB	5.561	1.230	.606**	0.092	.216*	.256**	.376**	.388**	0.148	.460**	1						
10	ComEff_IAM	5.532	1.188	.479**	.270**	0.094	0.185	.325**	.445**	0.011	.576**	.728**	1					
11	ComEff_BIA	5.458	1.185	.464**	0.108	.254**	.393**	.421**	.400**	.205*	.511**	.717**	.456**	1				
12	ComEff_MIA	5.440	1.121	.455**	.310**	.239*	.366**	.482**	.525**	0.187	.728**	.474**	.693**	.583**	1			
13	Perf_IA	5.677	0.926	.249*	0.189	0.069	0.173	0.184	.368**	0.077	.482**	.560**	.578**	.487**	.384**	1		
14	Perf_B	5.361	1.216	.746**	0.178	.253*	.372**	.481**	.490**	.268**	.548**	.746**	.630**	.624**	.608**	.501**	1	
15	Perf_M	5.222	1.208	.580**	.346**	0.177	.444**	.508**	.576**	0.186	.629**	.462**	.622**	.450**	.738**	.352**	.758**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Listwise N=102

A.23 Bootstrap results for Goveff as the dependent variable

Bootstrap for Coefficients							
Model		**B**	**Bootstrap[a]**				
			Bias	**SE**	**Sig.**	**BCa 95% CI**	
						Lower	**Upper**
1	(Constant)	3.940	-0.034	0.772	0.000	2.268	5.306
	Formal	0.090	0.001	0.105	0.392	-0.113	0.300
	Special	0.215	0.004	0.107	0.043	-0.008	0.439
2	(Constant)	2.015	-0.033	0.779	0.013	0.460	3.444
	Formal	-0.045	0.006	0.091	0.622	-0.224	0.161
	Special	0.097	0.001	0.093	0.289	-0.075	0.283
	Collab	-0.042	0.016	0.132	0.741	-0.316	0.273
	Creation	0.193	-0.013	0.126	0.138	-0.058	0.398
	Control	0.305	0.008	0.151	0.051	0.029	0.628
	Compet	0.148	-0.001	0.083	0.081	-0.024	0.307
	Supportive_Cult	0.015	-0.012	0.161	0.928	-0.340	0.286
3	(Constant)	0.910	0.013	0.798	0.247	-0.633	2.556
	Formal	0.002	0.004	0.091	0.985	-0.181	0.196
	Special	0.030	0.003	0.097	0.758	-0.143	0.228
	Collab	0.049	0.017	0.104	0.634	-0.178	0.322
	Creation	0.063	-0.022	0.097	0.524	-0.111	0.187
	Control	0.233	-0.013	0.123	0.066	0.021	0.433
	Compet	0.143	0.000	0.081	0.089	-0.021	0.303
	Supportive_Cult	-0.182	0.018	0.138	0.193	-0.490	0.149
	Comeff_IAB	0.476	-0.060	0.184	0.019	0.163	0.655
	Comeff_IAM	-0.048	-0.031	0.164	0.787	-0.320	0.176
	Comeff_BIA	-0.124	0.076	0.176	0.480	-0.479	0.487
	Comeff_MIA	0.214	0.007	0.168	0.197	-0.121	0.576
4	(Constant)	1.947	-0.106	0.653	0.004	0.718	2.898
	Formal	0.007	0.002	0.072	0.919	-0.140	0.154
	Special	0.014	-0.002	0.085	0.867	-0.134	0.175
	Collab	0.028	0.020	0.087	0.737	-0.158	0.280
	Creation	-0.006	-0.013	0.091	0.941	-0.176	0.128
	Control	0.167	-0.009	0.101	0.103	-0.008	0.334
	Compet	0.105	0.002	0.070	0.137	-0.038	0.251
	Supportive_Cult	-0.098	0.005	0.119	0.401	-0.351	0.149
	Comeff_IAB	0.187	-0.019	0.138	0.177	-0.052	0.393
	Comeff_IAM	0.055	-0.036	0.145	0.684	-0.220	0.224
	Comeff_BIA	-0.042	0.042	0.138	0.749	-0.313	0.404
	Comeff_MIA	-0.009	0.024	0.165	0.952	-0.332	0.405
	Perf_IA	-0.248	0.027	0.112	0.032	-0.510	0.079
	Perf_B	0.516	-0.024	0.157	0.002	0.210	0.752
	Perf_M	0.012	-0.003	0.148	0.931	-0.266	0.291

a. Unless otherwise noted, bootstrap results are based on 10,000 bootstrap samples.

A.24 Full list of in-vivo indicators for RQ1 (Constituents)

Code No.	Indicators	N	Code No.	Indicators	N
(1)	Communication quality	85	**(26)**	Reporting line	4
(6)	Personal communication	20	**(22)**	Independence	3
(19)	Informal communication	16	**(24)**	Common understanding	3
(13)	Formal reporting	14	**(7)**	Clear roles	2
(14)	Trust	9	**(9)**	Understanding the internal audit mandate	2
(15)	Value added	8	**(18)**	Time	2
(17)	Respect	8	**(25)**	Company culture	2
(3)	Expectation management	7	**(4)**	Challenge	1
(5)	Proactiveness	6	**(8)**	Openness	1
(2)	Feedback	4	**(11)**	CAE leadership attributes	1
(10)	Inclusion	4	**(20)**	Availability and accessibility	1
(12)	Support	4	**(21)**	Strategic involvement	1
(16)	Perception of internal audit	4	**(27)**	Participation in meetings	1
(23)	Two-way communication	4			

A.25 Full list of in-vivo indicators for RQ2 (Antecedents)

Code No.	Indicators	N	Code No.	Indicators	N
(2)	Trust	15	**(73)**	Independence of the board	2
(14)	Independence	13	**(79)**	Common understanding	2
(30)	Support	11	**(7)**	Audit charter	1
(5)	Regularity	10	**(16)**	Inclusion	1
(11)	Openness	10	**(19)**	Training	1
(17)	Company culture	10	**(24)**	Communication style	1
(23)	Availability and accessibility	10	**(29)**	Communication quality	1
(56)	Reporting line	10	**(33)**	Small circle	1
(13)	Transparency	9	**(34)**	Two-way communication	1
(6)	Face-to-face meetings	8	**(35)**	Appreciation	1
(21)	Perception of internal audit	8	**(38)**	Honesty	1
(26)	Informal communication	8	**(40)**	Acceptance of findings	1
(10)	Same agenda	7	**(42)**	Shared values	1
(12)	Understanding the business	7	**(43)**	Decisiveness	1
(4)	Respect	6	**(45)**	Regulation	1

(20)	Conciseness	6	**(46)**	Alignment of strategy and audit plan	1
(31)	Time	6	**(49)**	Business acumen	1
(39)	Open mindedness	6	**(52)**	Organization of the Board	1
(55)	Objectivity	6	**(57)**	Innovation focus	1
(37)	Competence	5	**(59)**	Communication skills	1
(53)	No politics	5	**(62)**	Agreement regarding the goal and purpose of internal audit	1
(3)	Professionalism	4	**(63)**	Language skills	1
(8)	Value added through internal audit	4	**(65)**	Experience	1
(9)	Good working relationship	4	**(66)**	Coordination	1
(22)	Clarity	4	**(67)**	Listening skills	1
(28)	Fairness	4	**(68)**	Logical argumentation	1
(48)	Resources	4	**(69)**	Being convincing	1
(58)	Timeliness	4	**(70)**	Attributes of the CAE	1
(27)	Constructiveness	3	**(71)**	Direct communication	1
(32)	Accountability	3	**(72)**	Completeness	1
(36)	Emotional control	3	**(74)**	Critical thinking of senior management	1
(41)	Flat hierarchies	3	**(75)**	No filtering of information	1
(47)	Scheduling	3	**(76)**	Continuous auditing	1
(61)	Use of technology	3	**(77)**	No "legal" mindset and total risk avoidance	1
(1)	Attitude	2	**(78)**	Mature and routine communication process	1
(15)	Expertise	2	**(80)**	Personal ethics	1
(18)	Clear roles	2	**(81)**	Education	1
(25)	Formal reporting	2	**(82)**	Personal background	1
(44)	Confidence	2	**(83)**	Targets for Senior Management to remediate findings	1
(50)	Tone at the top	2	**(84)**	Knowledge of risk management and internal control	1
(51)	Understanding the internal audit mandate	2	**(85)**	Qualification of internal auditors	1
(54)	Empathy	2	**(86)**	Industry experience	1
(60)	Physical proximity	2	**(87)**	Same priorities	1
(64)	Solution orientation	2			

A.26 Full list of in-vivo indicators for RQ3 (Outcomes)

Code No.	Indicators	N	Code No.	Indicators	N
(4)	Enabling the business	14	**(27)**	Mutual benefit	1
(15)	Transparency	11	**(28)**	Good relationships	1
(48)	Implementation of remedial actions	11	**(32)**	Independence	1
(33)	Efficiency	9	**(35)**	Taking care of important topics	1
(2)	Better assurance	8	**(36)**	Understanding of tasks	1
(5)	Trust	7	**(38)**	Appreciation	1
(16)	Value added through internal audit	7	**(40)**	Deeper connection	1
(34)	Effectiveness	7	**(41)**	Coordination	1
(1)	Informing the board/senior management	6	**(44)**	Change	1
(9)	Expectation management	6	**(45)**	Sufficient resources	1
(22)	Effective risk management	5	**(46)**	Covering top risks	1
(43)	Understanding of key risks	5	**(47)**	Full cooperation	1
(30)	Company culture	4	**(49)**	Shareholder value	1
(78)	Good governance	4	**(50)**	Societal value	1
(10)	Alignment with strategy	3	**(52)**	Organizational growth	1
(11)	Risk reduction	3	**(53)**	Best interests of the company/employees in mind	1
(29)	Good results	3	**(55)**	Additional audit topics	1
(37)	Acceptance	3	**(56)**	Appropriate risk evaluation	1
(39)	Common understanding	3	**(57)**	Less frauds	1
(58)	Better decisions by the board/senior management	3	**(59)**	Better integration of internal audit	1
(6)	Appropriateness of the audit plan	2	**(60)**	Talent development	1
(12)	Risk focus	2	**(61)**	Consensus about internal audit plan	1
(14)	Confidence	2	**(62)**	Better determination of risk appetite	1
(18)	Compliance	2	**(63)**	Learning organization	1
(19)	Good risk response	2	**(64)**	Reduction of mistakes	1
(20)	Perception of internal audit	2	**(65)**	Sharing of concerns	1
(31)	Prioritization of issues	2	**(66)**	Networking	1
(42)	Minimization of risks	2	**(67)**	Collaborative working relationships	1
(51)	Effective internal control	2	**(68)**	Trusted partner	1

(54)	Elaborated measures	2	**(69)**	Exploration of new risks	1
(73)	No crises	2	**(70)**	Better conclusions	1
(75)	Constructiveness	2	**(71)**	Understanding of root causes	1
(77)	Internal audit effectiveness	2	**(72)**	Focus on governance	1
(79)	Better understanding of the business	2	**(74)**	Understanding of internal audit concerns	1
(82)	Openness	2	**(76)**	Win-win for both sides	1
(3)	Better risk prevention	1	**(80)**	Improved use of analytics and visualization	1
(7)	Audit quality	1	**(81)**	No frustrations	1
(8)	Audit report quality	1	**(83)**	No prejudice	1
(13)	Focus on remediation	1	**(84)**	Awareness for important controls	1
(17)	Solutions to issues	1	**(85)**	Better tone at the top	1
(21)	Mitigation of risks	1	**(86)**	Clear goals and responsibilities	1
(23)	Improved assessment of strategic issues	1	**(87)**	Less politics	1
(24)	Understanding of information needs	1	**(88)**	Secure processes	1
(25)	Understanding of information received	1	**(89)**	Agility	1
(26)	Achievement of objectives	1	**(90)**	Monitoring	1

Curriculum Vitae

PERSONAL DATA

Name	Katharina Schramm
Date of Birth	September 16th, 1988
Nationality	German

EDUCATION

2015-2019	**University of St.Gallen** Ph.D. Studies in Management
2014	**ESADE Business School** Exchange Semester
2013-2015	**University of St.Gallen** Master Studies in Accounting and Finance and International Management (CEMS)
2012	**HEC Paris** Exchange Semester
2010-2013	**University of Mannheim** Bachelor Studies in Business Administration
2010	**Chamber of Industry and Commerce Dortmund** Certified Banker

EXPERIENCE

Since 2015	**University of St.Gallen** Research Assistant, Institute of Accounting, Control and Auditing (ACA-HSG)
2011-2015	Different professional experiences in financial services consulting, banking and higher education
2008-2010	**Deutsche Bank** Professional Training