Measuring the Degree of Trust and its Impact: the Role of Management Accounting in Creating and Maintaining Trust

Johannes Karl Mühl

June 2013

A thesis submitted in partial fulfilment of the requirements of Edinburgh Napier University, for the award of Doctor of Philosophy.

Thesis

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Declaration

I, Johannes Mühl, confirm that this dissertation and the work presented in it are my own achievement except where otherwise indicated.

This work has not been submitted to other institutions for a degree or other qualifications.

Edinburgh, June 2013

Johannes Karl Mühl

Thank you note

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Thanks to all the people in Scotland who made my time there a wonderful experience.

Dedication

This thesis is dedicated to all financial controllers and managers…

…and of course to my friends, Lin and parents.

Abstract

This research attempts to measure the degree of trust and its impact and to understand the role of Management Accounting in creating and maintaining trust. According to Zucker (1986) trust consists of three different forms; organisational, process and personal trust. In this thesis it will be shown that trust is a multidimensional construct based on the working definition of Zucker's formulation and further expanded in this research. Several publications on different types of business organisations and other value-adding partnerships consider trust as a pillar for successful operations in an increasingly global competitive environment. Some authors go further and argue that "in the economy trust is nowadays more important than natural resources" and that "trust is the prerequisite for existence and successful control of organisations".

As facilitators of trust, Management Accounting has an impact on and is impacted by the level of trust within a business organisation. The Management Accounting (controlling) function is often associated with the conscience felt in many types of business organisations as it can be seen as a key for the management to make crucial decisions. However, the interaction between trust and Management Accounting has not yet been explored in detail. Therefore, the goal of this research is to identify or construct models, test several hypothesis, find a measurement of trust and to investigate the impact of trust on organisational performance and sustainability. Additionally, this research aims to develop and test new statistical methods to conduct intraorganisational research.

To measure trust a questionnaire was developed and piloted. Part of this questionnaire was sociometric to allow the collection of data for social network methods to be applied. This meant that via the flow of communication the role and functioning of management accountants can be identified. This instrument was used in a private and in a public institution. From the analysis it was concluded that a dimension based measure of trust was developed as was a methodology for measurement. This allowed demonstration that as trust

increases so does organisational performance. The method also exposed the key role of management accountants in facilitating the flow of trust between CEOs and line managers.

Abbreviations

Abbreviations were widely avoided in this research to make reading easier. However, in the statistical analysis and other sections were sometimes unavoidable due to lack of space.

Abbreviation	Definition
#	Number
AG	Aktiengesellschaft (legal term shareholding company in Germany and Switzerland)
AICPA	American Institute of Certified Public Accountants
BAFA	British Association of Finance and Accounting
BCC	Browne - Cudeck
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CIMA	Chartered Institute of Management Accountants
CTO	Chief Technology Officer
DMU	Decision Making Unit
eMBAs	Executive Masters of Business Administration
EQLS	European Quality of Life Survey
ERP	Enterprise Resource Planning
EU15	The 15 European Union Founding Members
GmbH	Gesellschaft mit beschränkter Haftung (in U.K. Limited Ltd. Legal form of organisation)
HQ	Headquarter

HR	Human Resources
IHK	Industrie und Handelskammer (the German Industrial Chamber of Commerce)
ISCED – 3	International Standard Classification of Education (Apprenticeship / Dual school)
ISCED - 4	International Standard Classification of Education (Secondary school / Highschool)
KPI	Key performance indicator
MIS	Management Information System
P value	Probability Value (testing the hypothesis that the model fits perfectly in the population.)
R&D	Research and Development
SPSS	Statistical Package for the Social Sciences
SRMR	Standardised Root Mean Square Residual
Std. Dev	Standard Deviation
Std. Error	Standard Error / Standard Deviation
U.K.	United Kingdom
USA	United States of America
VP	Vice president
WZB	Wissenschafts Zentrum Berlin

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Table 8.2 Pearson correlation coefficients

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Chapter 1

1   Introduction

Trust is extremely important for business management and organisational performance. Many organisations which lost trust have not been able to recover and have went out of business. Enron - a prime example - has damaged the trust of its shareholders. And the entire banking industry, while originally being regarded as trustworthy by society it is viewed by many as highly distrustful.

In order to increase trust many systems and processes were set up in organisations to increase the level of trust (Velez et al 2008) of various stakeholders with a mixed success. These systems are often controlled by management accountants who occupy a key role in most of these systems.

Trust has also a big impact on the sustainability of systems, which do not function well when trust cannot be established (Velez et al 2008). Management accountants have a key role in organisational trust creation. Hence, concepts of trust are worth investigating.

> "By the 1990s, technology had changed the economic equation. Telecommunications created a truly global market place with intense competition and the need for quicker responses" (Thomas 2002, page 3 - 4).

Changes in modern business associated with ICT and internationalisation has led to more participation of employees and leaner hierarchies in organisations. Employees today are increasingly becoming more and more independent and educated (Sprenger 2007); leading to pronounced desire for freedom and mobility. This creates a new heightened challenge for the management to retain formal and informal control.

Therefore, management faces challenges in order to grant employees more independence and at the same time not sacrifice the cohesiveness and performance of the company as a whole (Bijlsma and Koopman 2003).

One of the known ways this can be achieved is by improving and adjusting control systems, providing incentives which can steer employees in the desired direction of the management (Hartmann and Slapnicar 2009). However, it has also been identified that social complexities within an organisation can also be reduced and controlled by increasing the level of trust (Luhman 2000, Krause 2004).

Hence, trust is being increasingly explored in management and organisation literature (Tyler and Kramer 1996, Nooteboom 2002, Dietz and Hartog 2006, Sanchez et al 2012). Several publications on different forms of business organisations and other value-adding partnerships consider trust as a pillar for successful operations in an increasingly global competitive environment (Velez et al 2008, Dyer and Chu 2003, Kenning 2002, Johnston and Lawrence 1989, Stölzle and Otto 2003, Fukuyama 1995, Sanchez et al 2012). They argue that high levels of trust can enable operations to be more efficient and effective. Some authors go beyond that and argue that "in economy trust is nowadays more important than natural resources" and that "trust is the prerequisite for existence, successful control and general success of organisations" (Sprenger 2007, page 26, 27).

Moreover, it has been identified that Management Accounting, also known as "Controlling" in other areas of the world, has an impact on and is impacted by the level of trust within organisations (Weber 2002, Stölzle and Otto 2007, Möller 2002, Tan and Woodward 2005, Reimer and Fiege 2009). The Management Accounting function is often associated with conscience in many forms of business organisations as it can be seen as a key for the management to make crucial decisions (Schäfer 2007, Hoch 2003) and thus is often the only department able to express an opinion on profitability and sustainability. However, the interaction between trust and Management Accounting has not yet been explored in detail (Baldvinsdottir et al 2003); therefore, further

exploration is justified to shed more light on the interdependencies between trust and Management Accounting (Reimer and Fiege 2009).

According to Zucker (1986) trust consists of three different forms; organisational, process and personal trust. This thesis focuses on the organisational trust levels but does take into account process and personal trust dimensions. In this thesis it will be shown that trust is a multidimensional construct but for the moment Zucker's formulation will be used as a preliminary working definition.

The aims of the research documented in this thesis are to assess the issue of how trust works in organisations and focus on the influence of management accountants as lubricants for trust and to analyse these aspects in different organisational contexts.

In order to achieve these research aims the following objectives are pursued:

- Literature Review and analysis of trust and Management Accounting concepts.

- How concepts of trust can be formed into an operational measure.

- Using the developed measure to understand the trust relationship between executives, line managers and management accountants and the organisation in terms of sustainability, performance and successful business relationships.

The specific research goals are to:

1. Find a multidimensional trust measure

2. Explore the weighting of trust dimensions in Management Accounting relations with business partners
   2.1. Management Accountants
   2.2. Line Manager

2.3.   Senior Management

3. Test models

3.1.   Explore the impact of trust between Management Accounting and Line Management on reduction of transaction costs, opportunism and access to resources

3.2.   Explore the impact of trust between Management Accounting and Line Management in two different corporate environments, one commercial business organisations and one public company. Specifically the investigations are to:

3.2.1. Verify impact of low and high trustors

3.2.2. Explore differences in cognitive- and affective- based trust in Management Accounting

3.2.3. Explore the impact of organisational tensions and the formation of networks on trust levels and performance

In order to achieve these objectives the following tasks will be undertaken:

- A conceptual model will be formulated to allow a series of testable research hypotheses to be assessed. This model will form the basis of the empirical investigation conducted in this thesis.

- Once this model is constructed a set of questionnaires will be developed based on the conceptional model. In order to understand relationships between management types the questionnaires will contain a module to allow social relationships to be identified and analysed.

- To emperically to examine the trust models two organisational based studies will be made. The first study is in a private company manufacturing medical devices - in which an employee survey is conducted to obtain data on attributes of trust, attitudes to trust and how people think trust is formed. Uniquely part of this survey is sociometric in

nature in order to obtain data on the nature and effects of links between employees. This will allow the adoption of social network analysis methods. The survey is then validated via a series of in-depth interviews to investigate the impact of social networks. The other study is set in a German University of similar size to the private company. In this study sociometric data could not be gathered.

- The two studies are then compared and contrasted.

The Flowchart below illustrates the summarised path of this research.
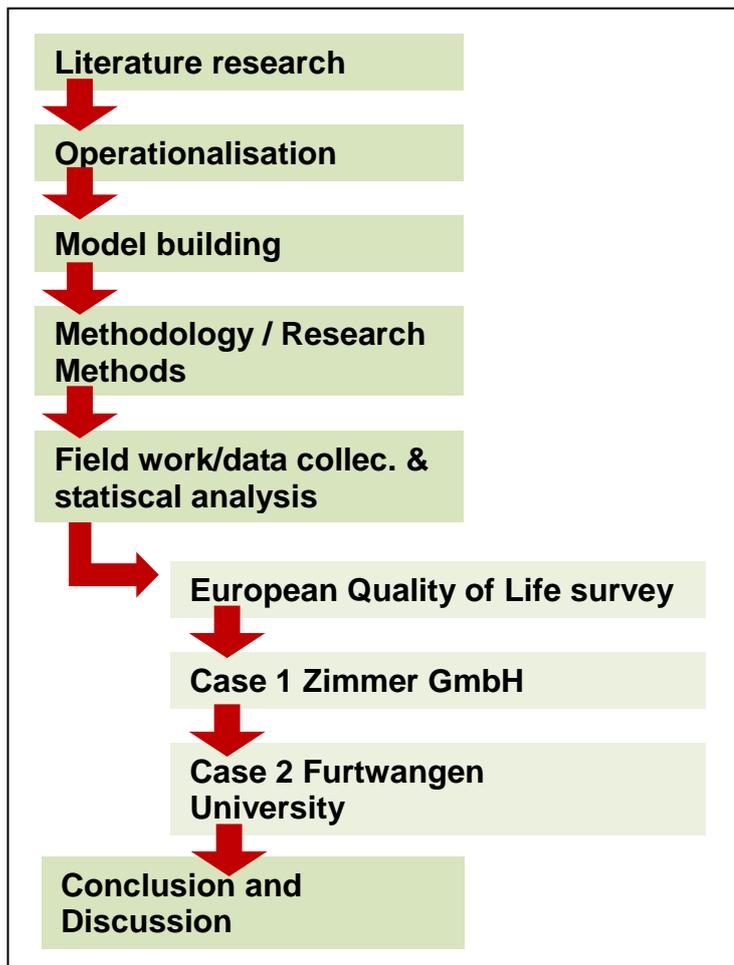
Figure 1.1 Process Flowchart

In the next chapter, the literature review is presented and the conceptual model is developed in chapter three. The underlying research methodology is the subject of chapter four – the methodology is then operationalised and the detail of the research method employed is presented. The empirical investigation of the trust construct is presented by two chapters on the organisation studies and these studies are compared and contrasted in chapter seven. Discussion on the reliability and validity of the research is also included in this chapter. The thesis concludes with a summary of findings, an assessment of the contribution of this work and recommendations on how to foster and nurture trust in organisations and finally paths for future research are outlined.

The thesis is about finding a measure of trust and how trust operates in public and private business companies. It creates a new updated definition of trust by including inputs from different schools of thought far beyond currently existing definitions and models. Models of organisational and personal trust are created based on existing models in economics, social network theory, game theory and psychology. This conceptualisation is a main part of this research.

The developed models and questionnaire serve as a toolbox, which organisations in future can adopt to investigate their individual trust levels.

From this study the following was found:

- A successful measure of trust was developed.

- It was proven that the role of management accounting is important for the flow of information and decision making. Management accountants have emerged as an important bridge between different stakeholders.

- The same basic concepts and operating of trust appear to be the case in both organisational types.

- A toolbox was developed in how trust can be nurtured within organisations.

- A quantitative research method was developed for researching trust in organisations.

Chapter 2

2 Literature Review

On a broad scale, trust is found to be used more and more often to explain a vast array of behavioural patterns in the economy. For example: trust as the motivator for individuals to perform in an organisation (Sprenger 2007); the level of trust customers grant to firms based on relationship, social capital, honesty, ethical behaviour and sincerity which could lead to increased or decreased sales volumes and reputation (Kenning 2002, Tonkiss et al 2000, Sanchez et al 2012). Trust is also mentioned in many articles as a reason for partners to share knowledge (Peters 2008). Therefore, it is necessary to identify the concepts of trust in the literature.

In this literature review the concepts of trust and the complex nature of trust are discussed mainly by adopting Zucker's concepts (1986) and looking at existing definitions of trust. Additionally, the ways how trust is build and destroyed and the impact of trust on organisations are both identified.
In this context emphasis is also given on naming conventions, organisational tension and intercultural differences of trust.

2.1 Concepts of Trust

Concepts of trust are studied in various scientific fields and are also used in daily life to explain numerous behavioural patterns. Similarly in organisational science the trust construct has received attention.

Many definitions of the trust construct exist, and some of these are shown in Table 2.1a.

Table 2.1a Definitions of trust

Author	Definition
Rouseeau et al 1998	"Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another."
Barney and Hansen 1994	"Trust is the mutual confidence that no party to an exchange will exploit the vulnerability of another"
Luhman 2000	"Trust is a way to reduce social complexities"
Fukuyama 1995	"Trust is the expectation that arises within a community of regular, honest and cooperative behavior, based on commonly shared norms, on the part of other members of that community"
Creed and Miles 1996	"Trust is both the specific expectation that an other's actions will be beneficial rather than detrimental and the generalized ability to take for granted, to take under trust, a vast array of features of the social order"
Gambetta 1988	"When we say we trust someone or that someone is trustworthy, we implicitly mean that the probability that he will perform an action that is beneficial or at least not detrimental to us is high enough for us to consider engaging in some form of cooperation with him or her"
Coleman 1991	"An incorporation of risk into the decision of whether or not to engage in the action by acting based on estimates of the likely future behaviours of others"
Tyler and Kramer 1996	"Trust = F(embedded predisposition to trust, characteristic similarity, experience of reciprocity)"
Boon and Holmes 1991	"confident positive expectations about another's motives with respect to oneself in situations entailing risk"
Zhou et al 2005	"is a state in society. It generally means a binary relation between two entities: one entities confidence, belief and expectation that another entity will act or intent to act benefically."

The trust definitions appear all relevant for specific scenarios but appear to neglect to capture the broad nature of trust. There are differences in how scientists assume trust is created, whether it derives from a psychological state

as Rouseeau (1998) pointed out or does it come together from a cognitive estimate, which is mentioned by Coleman (1991) or Tyler (1996). Additionally, authors put different emphasis on what trust building needs. Some authors perceive vulnerability as crucial for trust building, while other authors such as Zhou (2005) and Fukuyama (1995) do not put as much emphasis on that. This shows that trust is operationalised in different ways by different authors and no universal trust definition has found acceptance amongst scientists yet.

It would appear that since the end of 1999 there has been little evidence in journals or other literature that more updated trust definitions have been developed or published. The few definitions submitted more recently also appear to be based on previously suggested concepts.

Hartog and Dietz stated that: "Several measures of intra-organisational trust are also available. Such a range of possible operationalisations may reflect the multi-disciplinary interest in trust, and its multi-dimensional nature" (Dietz and Hartog 2006, Page 558). However, Tyler and Kramer (1996) observed that the treatment of trust is extremely fragmented and suffers from unidimensional conceptualisations and operationalisations and this remains the case.
Trust cannot be sufficiently separated from other related constructs such as cooperation and familiarity as there is no clear trust definition and several dimensions overlap (Luhman 2000, Osterloh and Weibel 2006, Jones and George 1998).

It appears that several dimensions can be identified and appear to make a contribution within the different concepts of trust, and these are now outlined.

The failure to obtain a comprehensive conceptualisation of trust is part of the main motivators for research in this thesis. Therefore, in this research a most comprehensive trust measure is developed.

2.1.1 Personal Trust

The trust construct incorporates a minimum of two participants: a grantor who grants trust and a grantee who receives or obtains trust (Kenning 2002, Klaus 2002). In literature these are often referred to as: grantee and grantor of trust or as trustee and trustor (Coleman 1991, Sprenger 2007, Dietz and Hartog 2006, Peters 2008, Zhou et al 2005). Both the trustee and trustor can be people, organisations, groups, firms, associations and animals. (Osterloh and Weibel 2006, Nooteboom and Six 2003, Kenning 2002, Klaus 2002, Peters 2008, Zhou et al 2005).

The grantor grants trust to the grantee with the expectation of a certain behaviour of the grantee. The reaction of the grantee can then be a trustworthy behavior or a fracturing of trust due to untrustworthy behavior. The grantee either follows the anticipated behavior or does not. When following in line with the expectation of the grantor the trust is confirmed and the trust is seen to be worthy and often honoured or rewarded (Kramer and Cook 2004, Peters 2008). When the behavior is not in line the trust was unworthy and is usually not rewarded (Currall 1990, Klaus 2002, Peters 2008).

The interactions between the grantee and the grantor are defined as a trust relationship (Boon and Holmes 1991, Osterloh and Weibel 2006, Noteboom 2003, Zhou et al 2005, Saunder et al 2010). A trust relationship can be a one-time event where a grantor grants trust to the grantee in a single case scenario. However, this can extend to more situations and also with changing or interacting roles between trust grantor and grantee (Sprenger 2007, Osterloh and Weibel 2006, Peters 2008). In fact, practice in commercial business organisations shows that most of the trust relationships are rarely one-off projects or single ventures and are usually more continuous and repetitive with rising expectations over time (Tomkins 2001).

Even if in the first instance or in several instances a grantee responds to the trust grantor with untrustworthy behavior the trust relationship is not automatically terminated but often 'hurt', meaning that there is a general tendency that a trustor is then disappointed with the outcome of granting trust to the trustee (Klaus 2002, Nooteboom and Six 2003). Often this results in a decreased level of trust or even mistrust. Once mistrust or a certain degree of doubt is developed by the trustor, the trustor might then be less likely to grant trust to the same trustee again in future events provided that the confidence in a positive outcome cannot be recreated. This is often difficult to determine.

In practice distrust is often viewed as the opposite of trust but in sociology several renowned authors have different opinions. According to Luhman "distrust is a functional equivalent of trust, as it also decreases social complexities and enables a grantor to make decisions intuitively" (Luhman 2000, page 93). It is more referred to as an expectation in an unfavorable outcome for the trustor but helps to predict the future. Luhman also argued that distrust is basically nothing other than a reduced level of trust or even zero trust.

Lewicki however, argues that trust and distrust can exist simultaneously in a single trust relationship and that trust and distrust are two independent constructs.
"Low distrust is not the same thing as high trust, and high distrust is not the same thing as low trust." (Lewicki 1996, page 444). He argued that trust and distrust exist in several facets of a single trust relationship depending upon different dimensions influencing the trust relationship.

In practice, trust tends to be rarely unlimited or blind, it is usually used for a specific situation and for a specific purpose (Sprenger 2007). There are situations where trust or distrust is idealistically granted or denied (Fetchenhauer and Dunning 2009). However, this is less common as people usually fear opportunistic behaviour and would not like to make their idealistic beliefs vulnerable to others (Sprenger 2007, Rouseeau 1998, Rotter 1990). In Figure 2.1 Sprenger illustrates that trust is a chosen relation to others.

"I distrust everybody"　　　**"I trust everybody"**

Distrust　　Trust

Blind distrust　　**Chosen relation**　　**Blind trust**
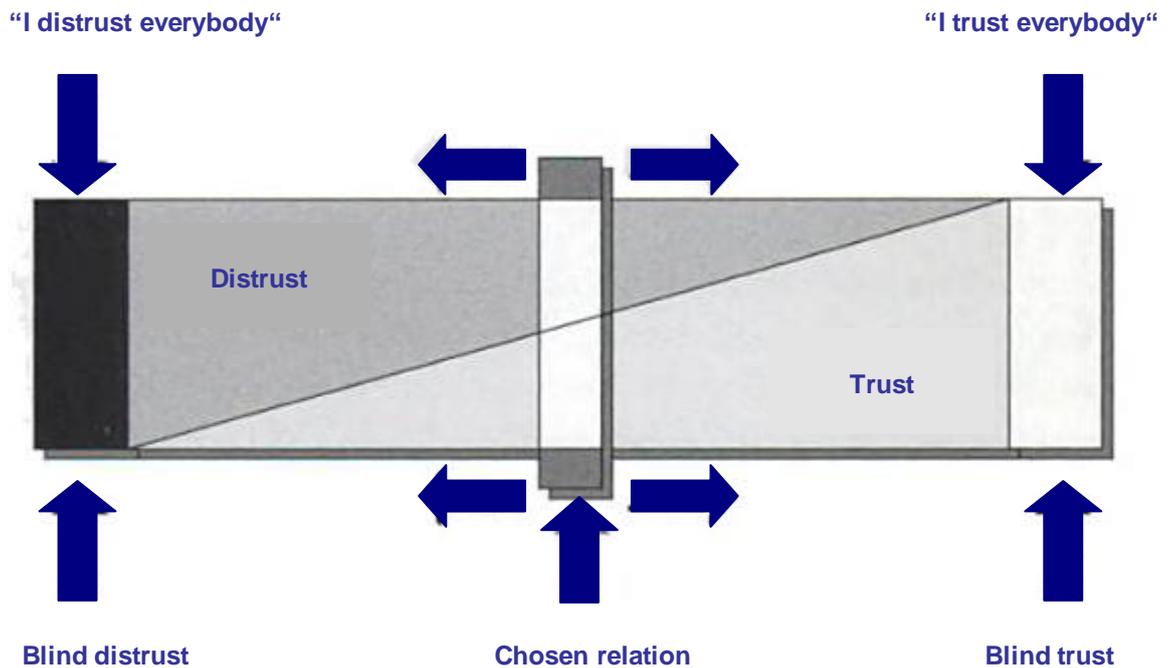
Figure 2.1 Personal trust equilibrium (Sprenger 2007)

Sprenger argues that in psychology it is argued that a trustor who thinks about 'totally trusting' somebody already implicates a certain degree of distrust and doubt (Sprenger 2007).

The decision to trust is argued in economics to be more calculative while in sociology and psychology most authors agree that it is an intuitive approach (gut feeling) and trustors are often not aware of the fact when they trust others (Sprenger 2007, Nooteboom and Six 2003, Rotter 1990, Weber 2008, Fetchenhauer and Dunning 2009).

In literature there is however, widespread agreement about the following characteristics of the trust construct:

- Trust always requires the awareness of risks and uncertainties in the future or in decision making (Sprenger 2007, Osterloh and Weibel 2006)

- The grantor of trust usually needs trust when he or she does not possess all necessary information about future developments and can therefore not anticipate forthcoming actions of the trust grantee (Luhman 2000, Sprenger 2007, Bachmann 2001, Tomkins 2001). If the grantor possesses all relevant information a trust relationship would not be necessary any more (Moorman et al 1992). The grantor could also choose a way to obtain themself instead of granting trust to another party. In economics this is defined as achieving objective trust rather than depending on the subjective trust of others although achieving objective trust might be uneconomic for the grantor.

- Trust is an action that involves a voluntary transfer of resources (physical, financial or intellectual) from the trustor to the trustee with no real commitment from the trustee. In languages such as German this situation is literally ingrained in daily language for example the phrase: "Jemandem Vertrauen schenken" (literally translated: to give trust as a gift to somebody) reflects this.

- A time lag exists between the extension of trust and the result of the trusting behaviour (Coleman 1991).

Trust building appears to be well researched and there is agreement about the ways in which this happens in theory and in practice. The key quantitative and qualitative drivers of trust creation or trust deterioration in literature are:

- Trust can occur based on prior experiences, which are extrapolated into the future (Luhman 2000, Sprenger 2007, Kenning 2002, Doney and Cannon 1997). This can either lead to trust or distrust.
- Trust can be created or hurt by receiving positive or negative references through trustworthy third parties (Busco et al 2006, Bachmann 2001)
- Trust can be built or deteriorated through a positive or negative general reputation (Tyler and Kramer 1996, Kenning 2002).

- A grantor is more likely to grant trust if the cost of trust fracturing is immaterial (Coleman 1991, Moorman et al 1992).
- A grantor is more likely to grant trust if the likelihood of success outweights the risks involved.
- Trust can arise based on similar characteristics between trustee and trustor, where the commonality of both is perceived to be a positive indicator for confidence in making commitments (Tyler and Kramer 1996, Zucker 1986, Osterloh and Weibel 2006, Saunders et al 2010).

2.1.2 Organisational Trust

While personal trust relations are very complex, intra-organisational relations are even more complex. In particular, tensions between intra-organisational stakeholders and complex structures are seen to be causes for the higher complexities.

The complexity of modern organisations is described to require three major forms of trust: (1) Process trust, (2) abstract systems (system trust) and (3) Trust to specific individuals (personal trust) (Tan and Woodward 2005, Zucker 1986).

In organisations institutionalised trust is described as comprising three different key elements: individual and firm specific actions, intermediaries and regulations (Zucker 1986). All three mechanisms are seen to contribute to the trust levels necessary for economic exchange (Tan and Woodward 2005). However, each mechanism differs in its ability to maintain trust and the ways in which trust can be built and destroyed.

The characteristics shown in Table 2.1b were developed to take into account the main stakeholders in organisations but also in society. Personal and system trust is often granted to management accountants based on a variety of reasons.

For example a business partner might be willing to lend his or her car to a management accountant because of personal trust. However, the same business partner might not trust the system function of the management accountant in the organisation and might perhaps not be willing to share information. Therefore, trust in systems is quite different from personal trust as there are different determinants involved.

Table 2.1b Process-, Characteristics-, and Institution-based trust (Zucker 1986)

Trust building mode	Basis	Source(s)
Process-based	Tied to past or expected exchange	Reputation, brands, gift-giving, guarantees, fairness in procedures
Characteristics-based	Tied to specific persons, ascribed to a certain subculture	Family background, ethnicity, gender
Institution-based	Tied to formal social structures	Professional or firm associations, education, banks, regulations, fairness in distribution

The forms of trust - system trust, process trust and personal trust - intermingle as pointed out by Bachmann 2001 and Busco et al 2006. Hence, the exact distinction is often difficult to make.

2.1.2.1 Trust in Commercial Business Organisations

Creed and Miles found in 1996 that the impact of trust is different on different organisational forms.

The discussions in organisational science and beyond often relate to what organisational forms require what kind of trust level to operate efficiently and effectively (Osterloh and Weibel 2006). Within different organisations the trust

levels vary (Wiewiora et al 2010). Depending on the structure of an organisation employees usually engage differently in multiple exchange relationships, benefit differently from each other and respond to each relationship with different behaviours (Wiewiora et al 2010, Velez et al 2008) and attitudes. This is impacted and impacts the levels of trust in an organisation and the trust relationships made.

Though trust is an integral part in most organisational forms; Network or Matrix organisations require a higher degree of mutual trust than functional or hierarchical organisational forms (Kramer 1997, Sprenger 2007). In hierarchical types the relationships tend to be more based on reliance as the distribution of power is unequal amongst stakeholders. Therefore, the relationships tend to be more formalised and structured and the possible situations where trust might be able to play a role are reduced.

Functional organisations are seen to work well with formal control while still requiring a certain degree of trust. They appear to be less dependent on trust as the relationships are predetermined by the functions of the different stakeholders. Trust plays a more integral part in cooperating with the different functions (Wiewiora et al 2010).

In a matrix organisation it seems to be costly if trust is not ingrained, empowerment and decision making does not happen on the lower or on the project level (Wiewiora et al 2010). Centralized managerial and control functions in matrix organisations are described to be in themselves redundant, increasing administrative costs, limiting speed, resource allocations, innovation, team formation, and create loss of operating efficiency and responsiveness (Kramer 1997).

2.1.2.2 Trust in Public Organisations

According to Sprenger 2007 trust in public civil service does only play a limited role in cooperation with others. Trust always requires the freedom of choice to actually be able to make respective decisions (Kramer and Cook 2004). Most civil service departments are hierarchically organized and a lot of decisions are predetermined by formalised policies and statute that every civil servant has to adhere to. All of that leads to lower necessary trust levels (Kramer and Cook 2004). All of that can lead to the assumption that in the Public Civil Service sector trust plays a reduced role (Sprenger 2007).

Therefore, it could be construed that "organisational culture can encourage (or discourage) trustworthy behaviour through the structuring of general patterns of communication, coordination, and decision making" (Wiewiora et al 2010, page 4).

However, Dietz pointed out in 2002 that trust has also an influence in public organisations on the success and also mentions that:

> "organisational success, by which is envisaged not just financial rewards (employee share ownership, profit-sharing or 'gainsharing' bonuses) but – with one eye on the public sector - other measures of organisation-wide commendation (such as celebrating improved performance)." (Dietz 2002, Page 14)

Viklund in 2002 confirmed that trust plays a role in public organisations or non-commercial organisations.

> "Scholars active in the field of organizational behaviour have identified a large number of possible benefits of trust, for commercial as well as non-commercial organizations (for a review, see Kramer, 1999)." (Viklund 2002, page 3).

In his study where he researched five Swedish organisations he found some differences between commercial and non-commercial organisations:

> "Attributes of trustworthiness and general trust scales were more successful components in explaining trust in non-commercial organizations (i.e., the Government, the Workers' Union and the Nuclear Power Inspectorate) compared with commercial organizations (i.e.,advertising firms and e-commerce firms). Moreover, trust in commercial organizations was less correlated with measures of general trust. This indicates that traditional trust research may lack important components necessary to explain trust in commercial organizations." (Viklund, 2002, page 27).

It could be construed that trust in public organisations might be captured more easily through questionnaires than in commercial organisations as indicated by Viklund. However, this might not be necessarily true - the findings most likely represent the difference between commercial business organisations and public organisations.

Due to the homogenous reporting lines and formalised channels of information flow, which are traditionally ingrained in public organisations, civil servants might be able to trust into their system more homogenously. This is because employees of public organisations know their organisation is formalised and treats everybody more or less equally while employees from private organisations can more or less only trust (predict the future) within their own network but have little information of their company as a whole or what other teams are doing. Hence, employees of commercial business organisations are more likely to report trust disparities than employees from public organisations.

2.1.2.3 Vertical and Lateral Dispersion of Organisational Trust

Also within the organisational hierarchy, trust is differently dispersed (Hartmann and Slapnicar 2009). There are authors who claim that trust in management is not behaving homogenously and tends to decline as one moves down the organisational hierarchy (Dietz and Hartog 2006). For example one study revealed that secretaries apparently trusted their bosses less than the bosses their secretaries.

However, the Society for Human Resources Management (SHRM) and Careerjournal.com came up with contradicting results in their survey. They conducted a survey finding that 70 percent of employees rate their organisation's leadership as either "extremely" or "moderately" trustworthy; 11 percent and 20 percent, respectively, of the survey participants rate the organisation's leadership as "not at all" or "mildly trustworthy" (Rural Telecommunications 2004 from Smith 2005).

The results of this SHRM survey are not consistent with the findings from (Hasting and Potter 2004, Karl 2000, Morris 1995, all from Smith 2005). According to Smith (2005), Hasting and Potter (2004) stated that seven out of ten people distrust chief executive officers of companies. According to them the distrust originates from management's disregard for personal integrity. Morris (1995) concludes that 56% of employees view lack of trust as a problem in their company.

2.1.3 Trust in Intercultural Context

Trust operates differently in various national cultures, corporate cultures and subcultures. Hence, authors concluded that trust models have to take into account how trust operates and the models need to be adjusted accordingly (Saunders et al 2010).

Nooteboom states "Wider cultural environment, the narrower cultural environment of a firm one works for, personal upbringing and genetic endowment. The threshold is likely to adapt as a function of experience. Trust may then be modeled as based on a perception of such" (Nooteboom and Six 2003, page 5). Similarly, this is also mentioned more recently by another author (Reychav and Sharkie 2010).

In context of national culture authors try to shed light on trust differences. Fukuyama (1995) tries to illustrate the existence of high and low trust societies and that they have an immediate impact on the industrialisation of countries and or regions. He draws lines between South- and North- Italy and tries to empirically prove his theory. Chua researched for example, the impact of culture in cognition and affect based trust and revealed in their empirical analysis several differences between American and Chinese managers (Chua et al 2009).

As for organisations the impact of culture in intra organisational trust relationships can be perceived to be complex (Saunders et al 2010). Varying subcultures, "norms, values and underlying behavioural assumptions" (Doney et al 1998, page 602) of individuals within a national culture make the impact on organisations even more complex.

In this thesis national culture is not considered. The author recognises the impact of culture on trust. Cultural dimensions such as high uncertainty avoidance and low uncertainty avoidance from Hofstede are likely to play a big role in the likelyhood whether people trust another (Hofstede 2013). However, for this thesis the impact of culture is not considered as this would not add much news to the existing literature. Therefore, this research is purposely conducted within one main national culture. Confined to the german speaking area the studies are going to aim to investigate other relations where cultural impacts were attempted to be excluded to prevent watering of results and to get to more purer results. There are certainly limitations on this approach but could not be completely avoided due to resource constraints.

2.1.4 Trust Dimensions

Regarding the influences of trust in Management Accounting it appears that there have not been any conclusive empirical studies conducted as to what extent different attributes support to increase (or decrease) trust in the Management Accounting vs. the Business Partner trust relationship. Therefore, it is considered crucial to understand what the interacting dimensions supporting (mitigating) trust between business partners and Management Accounting and their relevant weighting for the overall trust level are. How to measure trust is the subject of this chapter and firstly dimensions of trust are revealed and then various measures are put forward.

Trust measuring has been researched in several fields and there has been a great deal of debate as to how tangible measures of trust can be formed and applied. There are several operational measures and these are now listed:

First among these is *integrity* and is considered in the empirical studies of Dietz and Hartog in 2006. This was not considered a pertinent feature in some other research (Spreitzer and Mishra 1999) and some authors argue that integrity is a synonym for openness and honesty (Dietz and Hartog 2006, Wiewiora et al 2010). However, authors might have neglected that Integrity also incorporates a degree of fairness (Levin et al 2003). Fairness is not considered to be part of openness and benevolence. Therefore, integrity in this research is meant as fairness in order to defer from the other variables such as openness, being concerned, being honest and benevolence. Besides, fairness in the adherence to a set of principles suggested by the trustor is seen as important for this dimension (Mayer 1995). Similarly, Levin et al described integrity as "rules that are applied equally to individuals" (Levin et al 2003, page 69). Integrity also incorporates discreetness as mentioned by Mayer (1995) and Levin et al (2003). *Benevolence* is a dimension of trust described as the willingness to support the trustor in general (Doney and Cannon 1997, Mayer et al 1995, Zhou et al 2005). It is often referred to in theology as a form of love or altruism (Black 2008). Kant viewed it as the primary value and argues that being

benevolent to others is the most important basis for relationships. He stated that "if benevolence is not provided, all other values could turn evil and harmful for any relationship" (Kant 1785, page 10). Levin et al in 2002 described benevolence as being forthcoming and Mayer (1995) referred to benevolence as goodwill. Benevolence also refers to "the understanding and acceptance of the legitimacy of each other's interest" and "which may demand a sacrifice" on the trustors or trustee's side to increase the wellbeing of the other person (Deutsch 1973, page 537). Levin in 2002 described benevolence-based trust as such that "[…] an individual will not intentionally harm another when given the opportunity to do so" (Levin et al 2002, page 2) and as "you care about me and take an interest in my wellbeing and goals" (Levin et al 2003, page 65).

In organisations benevolence is often provided if political environment favours the stakeholders in a trust relationship and individual opportunistic behavior (Klaus 2002) is less of a threat. But also if peers and / or management are in favour of certain individuals because they follow a similar agenda as that which they themselves want them to do. Then under these circumstances a trustor is more likely to be benevolent as it is in his or her own overall interest.

Benevolence is usually based on a common goal. It is rare that under a conflict of interest benevolence is granted by a trustor unless other factors such as reliance, degree of vulnerability or other more important agreements between a trustor and a trustee intermingle.

Another dimension is *being concerned* and this determines the degree of how much the trust relationship concerns the trustee from his individual opportunistic standpoint. It is usually referred to as showing awareness of one's own impact on others. Being concerned is also defined as empathy. Being concerned is also the degree of how vulnerable oneself is to the wellbeing of the trustor (Weber 2008).

Competence, a further dimension, is seen in various ways by different schools of thought. In organisational science competence encompasses a combination

of knowledge, skills, education, social skills and behaviour used to enhance performance (Shapiro et al 1992, Nooteboom and Six 2003, Stölzle and Otto 2003, Levin et al 2002). More generally, competence is the state or quality of being adequately or well qualified, and having the ability to perform a specific role (Mayer et al 1995). Hence, competence is an integral part of determining whether a trustee is able to perform a certain action or not (Levin et al 2002). Weber suggested that social skills are part of the competence dimension and mentions that empathy is also a crucial part (Weber 2008) thus contradicting other authors who claim "being concerned" to be the right category for empathy.

In situations where competence is required a trustor might be less likely to grant trust to a trustee if he or she is incompetent and thus technically unable to perform the necessary action (Levin et al 2002).

The dimension of *openness* refers to open mindedness and flexibility of thought. It refers also to the ability to view problems through different angles and being able to put oneself into other people's shoes (Mayer 1995). This overlaps with empathy and appears to be very difficult to distinguish from integrity and in particular with being concerned.

Reliability is defined as the degree of how reliable the trustee is. It is often reflected as to what degree a trustee is in fact going to do what he or she initially intended and signalled to the trustor (Klaus 2002, Nooteboom and Six 2003). Other authors understand reliability as the likelihood that a promise or commitment the trustee gives or makes to the trustor is eventually fulfiled (Kramer and Cook 2004, Sprenger 2007).
Levin calls it "being consistent with word and deed" (Levin et al 2003, page 65).
It appears that reliability in essence is part of reliance as it helps to make outcomes reliable. For example, someone can rely on a car and on the fact that the car is technically capable but trusting a car is impossible. However, he or she can trust the employees, the organisation and the workers who produced the car.

Positive expectations of the outcome, thus strongly linked to outside circumstances, which can, cannot or only partly be influenced by the trustee. This appears very context based and overlapping with reliance and power. A practical example would be if: "an employee might be confident in the ability of their supervisor to represent their work to others, but be reluctant to share personal or even work-related problems with that person" (Dietz and Hartog 2006, page 562 in Gillespie 2003)

Positive expectations are also described as the degree of how harmonious an existing trust relation is and what the historical background is. The historical background is basically influenced by the outcome of one or several previous trust relationships (iterations). Tomkins states "trust derives from learned, usually interactive experiences" (Tomkins 2001, page 168). A similar comment was made by Kramer: "Trust thickens or thins as a function of cumulative history of interaction between parties" (Kramer and Cook 2004, page 138).

Intention, is the degree of the trustee's intent to perform an action in the trustors favour. Positive expectations of the intentions or behaviour of another (Rousseau et al 1998, Nooteboom and Six 2003, Mayer et al 1995) are reported to increase trust levels.

When the intentions of trustor and trustee are at a similar level, trust between trustee and trustor tends to be higher. In this situation trustee and trustor are aligned in their intent and share each other's goals. However, this can often be difficult if the trustee is in a target conflict situation or is not convinced that the intent of the trustor is in their own personal interests. Then trust is difficult to create and other trust and reliance dimensions will probably come into play.

Formally controlled systems or an unequal distribution of power can overrule the intention dimension. For example if the trustee has no option other than to perform a desired action due to possible sanctions. Hence, the weight of the intention dimension within an effective trust relationship varies with the influence of reliance.

Second Order Determinants of Trust

Other factors can build or destroy trust. Trust can also be created "by perceived similarities between trustor and trustee enhancing benevolence to another and thereby make trust building easier" (Rotter 1990, page 3). Beliefs in values, religion, politics and culture and being from the same gender and race influences trust building (Tan and Woodward 2005). Similarities are reported to be helpful for trust creation, therefore a trustor might trust individual trustees to different degrees based on familiarity (Nooteboom 2002, Kramer and Cook 2004).

Empirical research carried out by Garrison et al in 2010 confirmed that a highly diverse workforce usually implicates lower trust levels than a homogenous work force. They hypothesized that "the more perceived diversity within a distributed team, the lower individual team member performance" (Garrison et al 2010, page 34). They tested their hypotheses on 18 global distributed teams by a quantified research approach through questionnaire and statistical evaluation. The hypothesis of a negative relationship was supported with (β = -0.643; $p <$ .05).

On the contrary there could be a certain extent of falsification involved as the kind of question could make their research less valid. Garrison et al used the term trust in their questions, which should be avoided according to the notions of Brommiley and Cummings who claim that the word "trust" should be avoided in questions as it is seen as an emotive challenge for survey partipants and might distort answers (Cummings and Brommiley 1996, Wiewiora et al 2010).

High reputation was mentioned to be helpful or detrimental if it was low for building trust (Weber 2008, Tyler and Kramer 1996, Kenning 2002). It can be assumed that reputation can only be as good or bad as the source of information. If the provider of the information about a trustee's reliability, integrity, trustworthiness etc. is perceived as trustworthy then this information has a higher weight and increases a trustor's confidence in the trustee.

The judgement of how good the sources are is difficult to make and usually involves a great degree of psychology or even "gut feeling". Hence, Weber (2008) reports that the impact of reputation is very difficult to measure.

Honesty is seen to be the beginning of trust (Smith 2005). It is for example stated by Nooteboom that honesty and therefore being able to admit mistakes makes it easier to maintain a trust relationship than is the case when mistakes are hidden. If admitting to mistakes is delayed or not made the trustor is then often likely to perceive this as an opportunistic behaviour on the part of the trustee (Nooteboom and Six 2003) and this leads to decreased trust levels.

Dietz and Hartog (2006) mentioned another categorisation and argue that these trust dimensions can be put into different major trust groups. These groups are trust as a belief, trust as a decision and trust as an action.

Trust as a belief comprises dimensions such as benevolence, intention, and the probability of a specific outcome. These dimensions basically represent the willingness and impact of internal and or external reliance of the trustor to grant trust. Trust as a belief is seen to be the foundation of creating or entering a trust relationship. This is supported by Nooteboom who writes that "benevolence eliminates or reduces the risk for opportunistic behaviour". He also states: "Absence of opportunism is called 'benevolence'" (Nooteboom and Six 2003, page 6).

Trust as a decision, the second form includes: trustworthy behaviour, being concerned, reliable, competent, honest, able to resist opportunism and the willingness to render oneself vulnerable. These are in fact dependent upon characteristics of the trustee. These characteristics are also substitutable in relationships of reliance or relationships where both trust and reliance exist.

The third form defined as trust action and describes the resulting action based upon the trust groups belief and decision.

However, this categorisation suggested by Dietz and Hartog in 2006 appears to be insufficiently conceptionalised in their work. Especially the second trust form "decision" which included behaviour is not properly discriminated from the third form "action" as the trust dimension "behaviour" appears to be relevant for both categories. Behaviour can be the result of trust-belief and trust-decision and a trust-action but was clearly attributed to trust-decision by Dietz and Hartog in 2006.

Therefore, it could be to a certain degree assumed that Dietz merely constituted a simplification of dimensions to base his model on and thus make it operational. Thus their categorisation will not be pursued in this research.

Other more recent research designs and books about trust such as the work from Busco et al 2006, Osterloh and Weibel 2006, Sprenger 2007, Tzafrir and Gur 2007, Ybarra and Turk 2009 also neglected to mention these forms of trust. This could be related to the relatively recent publication by Dietz and the different focus of these authors.

Before Dietz and Hartog, Kenning developed another way of categorizing trust dimensions into different categories in 2002. Kenning divided trust into three different fields: "cognitive trust, reputational trust and experience based trust" (Kenning 2002, page 14 – 15).

Whereas reputational trust and experience based trust are merely another way of categorising trust dimensions; Cognitive trust can be partly associated with the definition of trust as belief from Dietz and Hartog in 2006.

Tzafrir and Gur (2007), by developing the work of Cummings and Brommiley (1996), tried to form a multidimensional trust measure.

The following instructions prefaced the scale used to measure trust by Tzafir and Gur.

"Think about specific core manager(s) in your organisation. For each statement, write the number that best describes how much you agree or

disagree with each statement, where (1) is strong disagreement and (5) is strong agreement" (Tzafrir and Gur 2007, page 1-20).

Table 2.2 Tzafrir and Dolan's Trust Scale

Tzafrir and Dolan's Trust Scale (2004)	
1.	Employees' needs and desires are very important to managers.
2.	I can count on my managers to help me if I have difficulties with my job.
3.	Managers would not knowingly do anything to hurt the organisation.
4.	My managers are open and up front with me.
5.	I think that the people in the organisation succeed by stepping on other people.
6.	Managers will keep the promises they make.
7.	Managers really look out for what is important to the employees.
8.	Managers have a lot of knowledge about the work that needs to be done.
9.	Managers are known to be successful at the things they attempt to accomplish.
10.	If I make a mistake my managers are willing to 'forgive and forget.'
11.	Managers' actions and behaviours are not consistent.
12.	Managers take actions that are consistent with their words.
13.	It is best not to share information with my managers.
14.	There is a lot of warmth in the relationships between the managers and workers in this organisation.
15.	Managers would make personal sacrifices for our group.
16.	Managers express their true feelings about important issues.

(Tzafrir and Gur 2007, page 1-20).

2.1.5 Other Trust Dimensions

Concepts of trust have been written in many different ways. Some of them have found access in research designs and others have not. The main one which appears to have been used and referenced most often is from Zucker in 1986. Hence, it is deemed more reasonable to use Zucker's main categorisation of process, system and personal trust as main trust domains in this research. The main categorisation points are then cascaded down to individual trust dimensions. A degree of falsification is involved and other aspects and conceptualisations might not be covered but it is most unlikely and may simply be illustrated or adopted in a different way.

2.1.6 Social Norms

Social norms vary amongst people and commercial business organisations. Therefore it is part of the explorative element of this research to find relations between social norms and high and low trustors or preferences of trust dimensions. Specifically, there is a need to find out about prosocial and dispositional trust.

Prosocial trust: We trust because trusting others is supposed to be good and often on the basis of cultural and religious values and the belief in goodness of others, which makes a breach of trust less likely (Sprenger 2007). Prosocial trust is also part of the benevolence construct.

Dispositional Trust: We trust because instincts tell us to trust. It might also be ingrained with our genes (McKnight et al 1998, Nooteboom and Six 2003, Black 2008).

Both prosocial and dispositional trust help to generate control. Some social norms like 'keeping books balanced', 'commitment', 'tit for tat' and others also

help to keep control (Wuketits 2002, Axelrod 1984). In the 'keep the books balanced-' strategy or norm the players are supportive to help the other if asked for the first time but then are likely to attempt to get a reward or suitable compensation later. In fact, it can be construed that this strategy is calculative in nature. According to Nooteboom this strategy evolved out of 'Tit for tat' (Nooteboom and Six 2003) but with the difference that the exchange does not happen immediately. "Tit-for-tat may look simple, but it is a useful formalisation of the basic problems associated with lack of trust." (Bardy 2006, page 166) In other words tit for tat might indicate basic lack of trust and where tit for tat is mostly chosen, the trust level in the network will be lower.

The other norm: commitment is less calculative and means that players are willing to help without exchange but afterwards the receiver of help is in general more benevolent to the grantor.

These norms are often used in game theory to explain players (participants) attitudes and strategies (see Fetchenhauer and Dunning 2009, Myserson 1997, Lorenz and Lazaric 1998, Klaus 2002, Berninghaus et al 2010, Nooteboom and Six 2003, Kramer and Cook 2004, Weber 2008, Hardin 2002, Lorenz and Lazaric 1998, Dasgupta and Serageldin 2000, Wuketits 2002).

In game theory at each turn of the game each player signals, usually verbally, to the other players a certain intention - mainly a tactical or strategic move or an idea - which they want to choose and follow later. While playing the game it does not necessarily mean that the player is in fact going to follow what they said initially. There are usually conflicts of interest involved and the motives and the possible options of the different players are mostly not transparent and known to the other players. Therefore, trust becomes very important to determine the likelihood of future events if it is mathematically not possible to predict or if time and resources prevent thorough analysis.

If a player does not concert their action with their previous announcement they might become less trustworthy for the next round of the game. Trusting or

distrusting is then mainly based on past experience with the different players. Trust can be maintained or re-established by consequences for not acting as initially announced, to decrease options of players on purpose or by installing a mediator to control the situation.

Trust itself has also been researched in game theory (Dasgupta and Serageldin 2000) for example the trust honour game (Krebs 1990 from Kramer and Cook 2004).

The view taken in game theory is that only a mutual approach can lead to continuous trusting and honouring of trust provided that both players are long term oriented and do not want to end the game (relation) (Nooteboom 1996, Axelrod 1984).

Though Hardin (2002) criticised the insufficient reflection of practice of the trust represented in games theoretic approaches, Kramer did not mention the impact of reliance within this game. For example the employee might be in a weaker situation than the employer (Hardin 2002) or vice versa.

The trust honour game appears to insufficiently reflect practice as the employee might not have options other than trusting. Employees might rely on the job as the single source of income while the employer has usually several candidates to work for them.
If the latter is the case and if the employer is opportunistically motivated he or she might stop honouring trust and gain more by hiring different employees than by trying to pursue a mutual approach.

In practice however such behaviour will become *word on the street* and will cause a negative reputation thus leading to less employees willing to work for such a superiour. Cook and Burt (2001) described this as "making the behaviour between two people public, which increases the salience of reputation for entry to future relations" (Cook and Burt 2001, page 38). Dasgupta and Serageldin (2000) mentioned it as the "reputation effects" in game theory (Dasgupta and

Serageldin 2000, page 3), which could explain that trust facilitates economic success.

Furthermore, Nooteboom critically mentioned the "forced play and the forced partner selection" (Nooteboom and Six 2003, page 89) and proposed a game where actors can be freely selecting partners. However, freedom of choice is also limited to some extent as decribed in the "search theory". The theory states that perfect markets can easily be distorted by search costs. Search costs are incurred while searching for the best possible trade partner - in this case a superior and/or an employee. These costs include cost of information and unrecognised and unrealised opportunities (Diamond 1982).

2.2 Concepts of Management Accounting

2.2.1 Interactions between Management Accounting and the Trust Construct

In commercial business organisations and public organisations in essence every individual and department, to varying degrees has an ability to self control their work and their productivity as well as trying to control others. However, there are departments which are completely dedicated towards bringing control into organisations. The classic example is: Management Accounting.

Today, a company's success can clearly be limited if informal networks and collaboration are not encouraged (Klaus 2002, Schwarz 2002, Weber and Meyer 2005, Levin et al 2003). In particular in value and supply chains trust is an important factor (Lenz 2008). The increasing economic importance of co-operations and networks within and across organisations (Weber and Meyer 2005) is likely to lead to a pronounced need to control these relations. So they have to trust one another or find ways to increase reliance and accountability (Anthony et al 2004).

Often, in many commercial business organisations the level of trust between Management Accounting and other partners is very low (Dyer and Singh 1998) and information is not shared due to opportunistic behaviours of individual stakeholders (Weber 2002, Krause 2004, Reimer and Fiege 2009, Weber 2008, Levin et al 2003, Levin et al 2002). This can be assumed to lead to a inability of management accounting to measure the efficiency and causality effects thereby causing management to make wrong or sub optimal decisions. Therefore, the traditional concepts of management accounting and steering a company is proving to be increasingly difficult.

Hence, commercial business organisations as well as public organisations have to find answers for their Management Accounting (Controlling) systems to make employees and stakeholders accountable (Anthony et al 2004) for their contribution to the "greater good" of the organisation and to set incentives to

prevent opportunistic behavior (Sholihin et al 2011). At the same time management accounting has to identify how trusted relationships can be fostered and controlled. Therefore, the management needs to decide whether to create a new form of control or to remain operating within the traditional concept of Management Accounting. Hartmann (2009) conducted one of the very rare studies about the relation of formal controlling systems and trust. He concluded "that the relationship between formality of performance evaluation and trust is different for managers in different situations" but "overall findings suggest that formality of performance evaluation system use is indeed a relevant characteristic in evoking subordinate trust. " (Hartmann and Slapnicar 2009 page 734).

Though most literature sources state that trust might have implications in Management Accounting so far only limited research has been conducted in the effects trust has in Management Accounting. Baldvinsdottir et al in 2003 conducted an analysis of journals where trust was at least used in the main body text. Only 11 articles were found in accounting journals over a period of 5 years.

Table 2.3a Trust in Accounting Journals (Baldvinsdottir et al 2003, page 3)

The review results – a quantitative analysis

As it turned out, 11 articles were found that made use of the trust concept. The distribution between the journals and over the years 1995-2002, is shown below in Table 2.

	1995	1996	1997	1998	1999	2000	2001	2002	Total
Accounting, Auditing & Accountability Journal	-	-	1	-	-	-	-	1	2
Accounting Organizations and Society	-	-	1	1	1	1	1	-	5
Accounting Review	-	-	-	-	-	-	-	1	1
Contemporary Accounting Research	*	*	-	-	-	-	-	-	-
Journal of Accounting and Economics	-	-	-	-	-	-	-	-	-
Journal of Accounting Literature	-	-	1	-	-	-	-	**	1
Journal of Accounting and Public Policy	-	-	-	-	-	-	-	-	-
Journal of Accounting Research	-	-	-	-	-	-	-	-	-
Journal of Management Accounting Research	-	-	1	-	-	-	-	-	1
The Journal of Finance	-	-	-	-	-	-	-	-	-
Management Accounting Research	-	-	-	-	1	-	-	-	1
Total	-	-	**4**	**1**	**2**	**1**	**1**	**2**	**11**

* The issues from 1995-1996 are missing.
** The issues from 2002 are missing.

Table 2. Number of articles using trust according to the selection procedure.

The table from Baldvinsdottir et al is somewhat outdated for this research, and therefore, an update has been created in Table 2.3b. It shows that concepts of trust have had increased coverage in several accounting journals in the recent years. This update has been done for the years 2003 until 2011. Additionally, one British dominated and one international journal was added to the selection. The big jump in 2003 might also be related to deficiencies of Baldvinsdottir's research perhaps there were already more articles published before 2003 than illustrated in Baldvinsdottir's Table 2.2a.

Table 2.3b Trust in Accounting Journals from 2003 - 2011

Source	Name of Journal	2003	2004	2005	2006	2007	2008	2009	2010	2011
B	Accounting, Auditing & Accountability Journal	13	13	25	26	18	24	23	21	16
C	Accounting Organizations and Society	11	19	8	13	16	21	31	22	24
A	Accounting Review	1	11	8	6	4	17	13	17	19
D	Contemporary Accounting Research	2	5	7	5	6	6	6	10	18
C	Journal of Accounting and Economics	3	3	7	3	2	5	4	9	4
	Journal of Accounting Literature*									
C	Journal of Accounting and Public Policy	5	4	5	9	6	2	5	8	3
D	Journal of Accounting Research	7	5	6	2	6	5	9	8	6
A	Journal of Management Accounting Research	2	2	0	1	3	3	3	3	2
E	The Journal of Finance*	1	0	0	0	0	1	0	0	0
C	Management Accounting Research	8	11	7	9	4	10	8	4	13
	Total	**53**	**73**	**73**	**74**	**65**	**94**	**102**	**102**	**105**
------	--	----	----	----	----	----	----	----	----	----
C	British Accounting review	2	7	9	8	4	9	10	13	11
C	The international Journal of Accounting	6	3	5	4	4	4	2	5	6

*Search was only possible efficiently in abstract and Title
*Search was not possible efficiently

Source

A   American Accounting Association 2012
B   Emerald Insight 2012
C   Science Direct 2012
D   Wiley 2012
E   The American Finance Association 2012

In most journals as illustruated above in Table 2.3b trust was found in the body text but was not part of the research goal or widely discussed. Though trust concepts have been referred to in accounting literature, so far, there are only a few authors such as Vosselman and Van der Meer-Kooistra in 2008, Sholihin et al 2011, Tan and Woodward in 2005, Schwarz in 2002, Strobel in 2002, Smith in 2005, Weber in 2008, Weber in 2005, Reimer and Fiege in 2009, Hirsch in 2002, Johansson in 2003, Richardson in 2009, Masquefa in 2008, Bardy in 2006, Kramer and Cook in 2004 and some others who paid particular attention to these relations between trust and accounting.

For example Tan and Woodward described three possible research areas: (1) Transfer Pricing, (2) Budget Setting Process and (3) Accounting Information Systems (MIS) and conducted initial literature and case study research in this field.

To some extent the works from Williamson in the transfer pricing discussion can have an impact within Management Accounting (Williamson 2005) but the concepts of trust and Management Accounting interaction is not named explicitly.

However, while the above authors solely described characteristics of these interactions only Weber attempted to design a model to operationalise trust in a Management Accounting organisational context.

Weber suggested incorporating the concepts of trust related controlling as part of his concept of "co-operation-controlling" (Weber et al 2004, Weber 2008 page 374, Weber and Meyer 2005 pages 130-139). He argued that if trust is perceived as a major resource, Management Accounting should attempt to operationalise trust and make it measurable (Weber et al 2004, Weber 2008). His concept of co-operation controlling originated from a "transaktionskostenökonomischer Grundlage" (transaction cost theory basis in economy) and would have to be further developed (Weber and Meyer 2005, page 140).

Weber in particular focused on controlling the trust levels of internal as well as external suppliers. He proposed several concepts such as "advanced partner evaluation", "value checks", "co-operation questionnaire", "value balance card" etc. (Weber et al 2004, Weber 2008, page 374 - 375).

For operationalising these concepts he identified several trust dimensions, which he considered to be most crucial such as "reliability, competence, reputation, vulnerability and loyalty" (Weber et al 2004, Weber 2008 page 377, Lenz 2008 page 130). Weber's research method comprised a questionnaire

designed to measure the trust levels but he did not test his model. He suggested a five point Lickert scale and several intervals to capture data.

Levin also mentioned "accountability for trust" referring to trust control (Levin et al 2003, page 65) being helpful for trust creation (Anthony et al 2004). This has further been researched by Vosselman and Van der Meer-Kooistra who focused on "interaction between control and trust building." (Vosselman and Van der Meer-Kooistra in 2008, page 1) in an accounting related context. Vosselman and Van der Meer-Kooistra further theorised the concept and provided more evidence. Sholihin et al in 2011 then further researched the effect of corporate goalsetting on trust to make employees more accountable and thus increasing procedural fairness.

> Likewise, Schwarz proposed in 2002 the introduction of "Management Accounting Systems which put more emphasis on interaction with trust and reputation to keep up with fast moving environments in particular E-business and places where creativity is crucial to achieve business success ".
>
> Schwarz further suggested that the creation of control through "corporate enterprise culture and clan controlling", which are both trust based as they strongly involve trust relations. (Schwarz 2002, page 421).

Corporate enterprise culture is understood as maintaining the same set of principles, a shared vision and a similar language, jargon and terminology within a co-operation (Levin et al 2003, Vosellman and Van der Meer-Kooistra 2008). Similarly, clan controlling is based on a commonly agreed set of principles but also actively controlled by the clans themselves (Schwarz 2002).

> "In accounting studies, trust appears to be an important factor across organisational settings and levels of analysis, and explains the functioning of company-wide pay-for-performance systems as well as the success of inter-organizational networks (e.g., Chenhall et al 2003,

Dekker 2004, Free et al 2008, Tomkins 2001)." (Hartmann and Slapnicar 2009, page 723).

Hence, it can be construed that the new Management Accounting (controlling) concepts are trust and reliance oriented.

2.2.2 Role of Management Accounting

Being in most organisations in key positions the role of management accountants in trust creation can be assumed to be important. However, the ways how management accountants are creating trust or whether they mainly depend on executives to give them power to create a trusted environment is likely not the same in all organisations. However, it can be assumed that management accountants likely have impact on trust by enforcing processes following best practice.

Management Accounting researchers do not agree on a single definition (Heidmann 2006, Bardy 2006). "In Wissentschaft und Praxis hat sich bisher keine einheitliche Controllingauffassung durchgesetzt, vielmehr werden sehr heterogene Ansätze vertreten" (In science and practice a heterogenous definition of Management Accounting does not exist) (Goes 2003, page 15).

One of the main goals of Management Accounting is to quantify and qualify the actual success (efficiency and effectiveness) and causality (cause and consequence) in any form of business organisation (Freidank and Berens 2004, Goes 2003). It is often used to provide guidance for management to decide whether to continue or discontinue business operations and investments (Reimer and Fiege 2009, Vosselman and Van der Meer-Kooistra 2008, Goes 2003).

> "Various writers have illustrated the potential of accounting for visualizing, analysing and measuring the current state of a business, for questioning operational and managerial strategies, and for justifying new courses of action (Hopwood 1990, Ezzamel et al 1998). In particular, there is agreement that systems of measurement and accountability have the potential for making reality calculable (and thereby making individuals accountable" (Busco et al 2006, page 12)

Therefore, Management Accounting is seen as a formal control system (Vosselman and Van der Meer-Kooistra 2008, Heidmann 2006, Horngren et al 2001).

Management accountants usually have a dual reporting relationship. As a strategic partner (Reimer and Fiege 2009) and provider of decision based financial and operational information, management accountants are responsible for managing the business team and at the same time having to report relationships and responsibilities to the corporation's Management (Reimer and Fiege 2009).

> "[…] Accounting for control is underpinned by a governance structure, which includes accounting structures that have the potential to act as safeguarding and incentivizing devices with the aim of aligning long-term interests" (Vosselman and Van der Meer Kooistra 2008, page 1).

Management Accounting can be defined for many organisations as a Decision Making Unit (DMU) since it incorporates most comprehensively all information about the entire organisation (Horngren et al 2001, Heidmann 2006, Chapman 1998). It is the department which can express the most accurate opinion of where the company as a whole is heading to (Horngren et al 2001). In practice, controlling provides cockpit charts or Management Information System (MIS) reports comprising Key Performance Indicators (KPI) including also non financial information to the management (Hostettler and Hermann 2004). MIS reports and Management Accounting systems are usually designed to accommodate the specific needs of organisations (Goes 2003).

> "[…] Management Accounting information includes internal/external, financial/non-financial, quantitative/qualitative, and historical/future-oriented information that passed the perception and interpretation filter of Management Accounting systems" (Heidmann and Schaefer 2006, page 46)

As for the management of companies these reports are often the only foundation they can base their tactical and strategic decisions upon.

Consequently, the entire incentive system (Sholihin et al 2011) of a company is often dependent on these reports.

The correlation between forecasts and opinions expressed by Management Accounting (controlling) and the eventual decision made by the management has been researched before (Sholihin et al 2011) and was observed to be very close with some minor variations (Schäfer 2007, Weber 2002, Weber and Meyer 2005). These variances were primarily caused by survey participants with different organisational structures where in some, Management Accounting was often only responsible for managing financial data but no other non-financial KPI or the actual tasks of Management Accounting were limited to checking and auditing functions.

Management information systems usually contain data from accounting as well as administrative and disposition systems on the operational and strategic side across all departments of a commercial business organisation. External information about competitors, supplier etc. can usually also be found. In public organisations the information is not so detailed and comprehensive (Homann 2005).
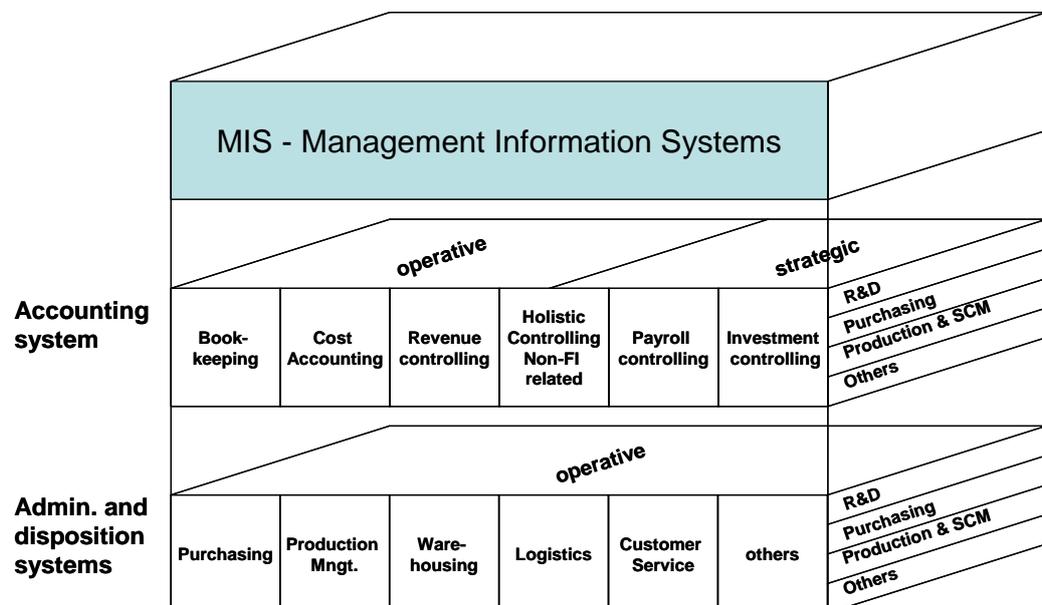
Figure 2.2 Management Information Systems (Reichmann in: Hirsch 2002, page 563)

Whilst there are multiple organisational structures of Management Accounting it seems clear that almost all commercial business organisations have one or more departments which are the key Decision Making Units (DMUs) (Horngren et al 2001, Heidmann and Schaefer 2006).

2.2.2.1 Definitions of Management Accounting

Table 2.4 Definitions of Management Accounting

Source	Definition
Kaiser (2010) Interview, Aug 2010, 20:05.	"Management Accounting in essence is decision making oriented bookkeeping. Though Management Accounting in its organisational structure, naming conventions varies from country to country and firm to firm it is clear that the actuals tasks are the same in every company. The difference is that sometimes several departments make a contribution to the textbook definition of Management Accounting"
Wilson and Wai (1993), page 15	"Managerial accounting encompasses techniques and processes that are intended to provide financial and non-financial information to people within an organization to make better decisions and thereby achieve organizational control and enhance organizational effectiveness"
Anthony (1988) from: Schwarz (2002), page 46	"Controlling is the process by Management to influence the organisational members to execute the organisational strategies"
Heidmann and Schaefer, (2006), page 44	"Management Accounting systems are formal systems to prepare and provide information from the internal an external environment that helps managers to monitor organizational performance"

2.2.2.2 Definition of Management Accounting in this Research

In practice the tasks are often shared and spread across different departments. There is no unified term for Financial controllers or Management Accountants. Therefore, the term Management Accountant refering the the person or Management Accounting refering to the department are going to be used.

Additionally, in this research, Management Accounting is perceived to holistically control a commercial business organisation or a public organisation and in the context of a business partnering approach.

In this research the assumption is also made that Management Accounting incorporates non-financial information in their reporting and has a most comprehensive view across all information relevant for decision making in both commercial business organisations and public organisations.

Management Accountants in this research here are defined as supporters for decision making in form of reports or other forms to help executive management to make decisions. They are seen to be the filter between line managers and executives and are supposed to increase efficiency and effectivness in their organisations. In this research they are also seen to be responsible to implement as well as define together with exectives the overall strategy of their organisation. Management Accountants are seen to be brokers between line managers and executives to manage information channels as well as access to resources.

2.2.3 Management Accounting in Public Organisations

In public organisations the finances and Management Information systems are structured differently to those of private business organisations.

In the past the financial control in Germany and Switzerland is often based only on cash-in and cash-out (Homann 2005). The 'Kammeralistische Buchfuehrung' (single-entry bookkeeping system) (Wiesener and Westermeier 2007, Homann 2005) was used by most German and Swiss authorities. Only realised gains or losses were considered in the official reporting. Additionally, there was no tax gap, USGAAP or local Gaap involved, the rules are mainly set by the lawmakers or government departments in the respective bundesland (province) or are stipulated by the constitutions of respective countries (Wiesener and Westermeier 2007).
However, in recent years a strong movement towards a reporting system similar to that of private companies can be observed and several authorities, communities and provinces have made changes to their financial reporting standards or are in the process of change.

Hence, it can be construed that decision making is still often based on a simpler set of information and reports than in commercial companies (Homann 2005). However, decisions made by public organisation are often not economically motivated but driven by a high degree of political interest, lobbying and other factors including the spectrum e.g. of politicians trying to accommodate to their voters in forthcoming elections and other influences (Viklund 2002). Additionally, the financial aim of a public organisation is often not to generate a financial profit but maintaining existing services or improving services with the funds available (Homann 2005).

In Germany in many cases the centralised government departments still control the payroll of all staff directly and the majority of other fundings both budgetary and operationally.

2.2.4 Management Accounting – Trust Building (Deterioration)

Trust is an "elusive concept that is often difficult for managers to influence" (Levin et al 2003, page 64) Additionallly, there are organisational tensions and conflicts of interest which management accountants face. These tensions can be assumed to influence trust relationships.

However, following the notions of trust building in the previous findings in literature, management and Management Accounting in organisations are reckoned to be able to contribute both positively and negatively to increase (decrease) the level of trust between stakeholders within or across organisations.

An example of decreasing trust is when controlling crosses the normal business relationship boundaries of reporting and guidance and starts to curtail the scope of other actors within an organisation too much. This is often related to layoffs and restructuring of a business but not often limited to the above.

Another example would be if Management Accounting tries to enforce a quantified baseline, often a forecast or budget which everybody has to adhere to but where the volatility, vulnerability and risk of mismatch of the chosen assumptions and parameters are so high that they cannot be reasonably predicted. This is particularly the case in fast moving environments such as Project Management, Consulting and Research and Development.

Management accountants could also start to become more short termist oriented and this can negatively influence the overall sustainability of the business. This can be caused by either individual opportunistic behaviour of management accountants, wrong incentives, direct orders from Management or by a combination of these factors.

Cost cutting activities can often create scenarios where management accountants want to show that they can make a difference to how economically

a business operates and thereby justify their own existence but this can result in neglect with regard to overall sustainability.

A bad attitude towards colleagues and the organisation as a whole is reported to decrease trust levels (Sydow 1998)

Conversely Management Accounting can often naturally create trust between stakeholders such as management, internal customers and partners by giving them the instruments to manage themselves (Stölzle and Otto 2003).

Through a high level of competency, transparent reporting, being neutral and respectful to their counterparts, Management Accounting can become a perceived valuable resource for the achievement for the greater good within a company and reduce moral hazards (Dembe and Boden 2000, Lau et al 2007, Stölzle and Otto 2003, Levin et al 2002).

> "Trust experts recommend that, particularly during hard times (layoffs, salary cuts), trust can be enhanced by such actions as providing high-quality face-to-face communication, including giving an adequate explanation for decisions, and treating employees with dignity and respect" (Kramer and Cook 2004, page 36).

> Levin et al in 2002 suggested to bring people together face to face as it is reported to "spur the conversations that can signal an individual's benevolence" (Levin et al 2002, page 7)

Being topic oriented and not accusative is seen to be a way of Management Accounting maintaining, creating or improving existing or new trust levels (Weber 2008, Levin et al 2002). Weber also suggests involving a neutral mediator during discussions between different parties. It can be assumed that this can apply also to discussions between Management and business partners. Management accountants could then serve in a mediator role by providing financial advice and setting the boundaries for these discussions in order to safeguard profitability and sustainability.

Building a common understanding and a common goal is recommended by Levin et al in 2002 to help increasing trust levels.

Warnock described that most employees in organisations operate based on what they think are promises but are, in fact, soft expectations that have not been clearly voiced and agreed on. When these expectations are not fulfilled the trust levels will decrease. Hence, he suggests that direct communication and what he calls agreed-to promise approaches could help fostering enhanced trust levels in an organisation (Warnock 2010). Similarly, Management Accounting could pursue target, projection and budget settings in a direct and specific manner.

Levin mentioned "accountability for trust" referring to trust control (Levin et al 2003, page 65, 67) to be helpful for trust creation. They identified that trust could be promoted through a way of measuring and rewarding trustworthy behaviours. Management Accounting can also adopt such an approach.

Additionally, other ways can be adopted of increasing trust. Other authors suggest that teams with good communication and interaction develop trust faster than teams with a weak rate (Jarvenpaa and Leidner 1999, Gao and Zhang 2006).

Theoretically, it could be assumed that what has been defined as 'Control', 'Objective Information' and 'Reliance' to describe what traditional concepts of Management Accounting partly create within an organisation. Thus Management accounting is perceived to be conducive to making an organisation reliable in its economic future.

Likewise, Management Accounting also creates trust while interacting with business partners and stakeholders within a business organisation.

2.2.5 Organisational Tensions

Organsiational tension are usually minimal when the organisation is successful in what they aim to do. When objectives are being reached, competition is not very strong and when things go well the organisation tends to be harmonised. However, when markets slump, external trust in the organisation deteriorates and recession has an impact on organisations – typically department leaders and individuals will try to ringfence their domains.

This begins with measures such as cost cutting where the real struggle for resources actually begins. In this interdepartmental struggle for resources the accountants will inevitably find themselves in the centre. Accountants will have to find solutions for these conflicts of interests between the line managers and also be able to illustrate these different interests to their executives so that they can make the decisions how to move forward. Hence, it can be construed that tensions can also be caused by organisational problems and not only by persons. Organisational structures create power disparities and Management Accounting is in the midst of these.

The reputation of management accountants plays a role in assessing the trustworthiness of management accountants. In companies management accountants could be perceived by line managers as being too close to shareholders or senior management. Hence, management accountants act in the interest of senior management and are perceived to be biased. On the other hand shareholders or senior managers might think the management accountants are too close to line managers and therefore do not work in their interest.

Assymetric information (Peters 2008) often causes tensions between line managers and management accountants (Bardy 2006). In some cases the accountants cannot share information with their line managers due to formal confidentiality agreements. This can often lead to discontent and stress on the side of the line manager if revealed at a later stage and can have an

uncomfortable outcome. Similarly, senior managers and executives are even more prone to facing such target conflicts.

Additionally, formal hierachy structures, and formal policies can have an effect on trust levels. Formal structures eradicate or limit the freedom of choice and thus trust is a reduced. Additionally, intra-organisational conflict of interest can be a problem for trust relations. Often these conflicts are caused and programmed by incoherent and non-holistic organisational targets.

Table 2.5 below illustrates the organisational tensions and mappings of the different stakeholders. The external stakeholders were omitted in this illustration as they are not the main part of the scope of this research.

Generally, tensions could be summarised but are not limited to the following:

Table 2.5 Organisational Tensions

		Between Management Accountant and Line Manager	Between Management Accountant and Executives/Sr. Managers	Between Line Managers and Executives/Sr. Managers
1	Reputation and function	Applicable	applicable	applicable
2	Formally wanted assymetric information	Applicable	applicable	applicable
3	Intra-organisational Conflict of Interest	Applicable	applicable	applicable
4	Formal organisational structure	Applicable	applicable	applicable
5	Formal and enforced Policies	Applicable	applicable	applicable
6	Corporate Culture of excessive check and controlls	Applicable	applicable	applicable

The literature review addressed several items, which were part of the aims of this research already. It shed light on the role of accountants in organisations in different countries and formed a naming convention for Management Accounting. It also supported the first steps of developing a most comprehensive trust measure by showing the disparity of trust definitions and by identifying trust dimensions and concepts of trust.

Additionally, the impact of tensions and organisational differences was discussed and is going to be addressed in more detail in the following chapters.

2.3   Influences of Trust within Organisations

In this section the impact of trust on the efficiency and effectiveness in organisations is discussed. It shows the current findings in literature in trust reducing transaction cost and improvement of control in organisations.
In the following sections the impact of transaction costs due to knowledge sharing, decision making, the influence of trust on Social Capital and the impact of control due to reduction of opportunistic behaviour and empowerment are pointed out.

2.3.1 Transaction Costs

In order to understand how trust influences efficiency and effectiveness it is crucial to shed light on the cost of every transaction. This is because trust causes reduction of social complexities thus making business more efficient (Luhman 2000).

Trust reduces social complexities and decreases power distance thus making collaboration more efficient within and across teams and departments. Klaus (2002) showed that trust decreases the level of formalisation of contracts and requires less investment and in practice this results in less hierarchy and increased efficiency.

Thus trust in networks allows reduced transaction costs (Williamson 1979, Bijlsma and Koopman 2003 and Creed and Miles 1996) and is said to work as an economic lubricant, reducing the transaction costs associated with investments and promotes new business formation, employment and prosperity.

Tan and Woodward (2005) takes on a similar point of view and argues that "if trust is high, certain information needs (with information consisting of detailed plans, processes, objectives and results, and accompanied by sanctions for inappropriate behaviour) is low" (Tan and Woodward 2005, page 38) thus makes information sharing more efficient and less costly.

2.3.1.1 Knowledge Transfer and Sharing

Trust also influences information sharing and thereby increases the efficiency of workflows and knowledge sharing leading to better results in teamwork. It is crucial to investigate trust and knowledge sharing as it is seen as having a large impact on the performance of commercial business organisations.

Levin et al (2003, page 64) stated that "today more than ever, an organisation's success hinges on its ability to create and share knowledge effectively and efficiently". Further, it has been stated that a trust relationship leads to more exchange of information between a trustee and a trustor (Tyler and Kramer 1996, Sprenger 2007, Tomkins 2001). Additionally, Gardner (2003) argued that trust is a key element in an individual's decision to share knowledge.

> McNeish and Mann (2010, page 20) pointed out that. "Trust is one among several factors such as organizational culture, social processes, previous experience on knowledge sharing, and external incentives that supports knowledge sharing in organization"

The influence of trust in knowledge sharing was empirically tested by Nelson et al in 1996. The results indicated a causal relationship - that trust acts through shared knowledge to impact group performance. Trust also allows employees to share their ideas without the risk of having these ideas subjected to ridicule (Reychav and Sharkie 2010).

Using a survey Levin et al (2002) researched the effect competence- and benevolence-based trust has on information sharing. Their studies revealed that "knowledge exchange was more effective when the knowledge recipient assessed the source of the knowledge as both benevolent and competent" (Levin et al 2002, page 2).

Levin et al also attempted to distinguish between different types of knowledge and whether the individual knowledge type affects the importance of trust in knowledge sharing. They hypothesised that when the state of knowledge is experiential, difficult to verify and/or tacit, it would involve a higher degree of competence-based than benevolence-based trust. Likewise, when knowledge is more tangible or codified exchange would be more impacted by benevolence-based trust.

Similarly, Wiewiora et al (2010) attempted to empirically research the interaction of trust and knowledge sharing in an inter-project context of three commercial business organisations. Based on a qualitative research model they interviewed three companies and found that there were dissimilarities in the perception of trust in companies. Additionally, benevolence-based trust was seen as less important for inter-project knowledge sharing than competence- and integrity-based trust. Wiewiora et al (2010) also described that trust building would be more difficult when work faces strong time constraints.

In this case benevolence-based trust could be viewed as a hygiene factor as it appears that the trust dimensions such as integrity and competence based trust prevail, reliance could also play a role. So it could be assumed that the parties - though in a rather relaxed project environment - do in essence not have a real free choice other than trying to be mutually successful.

Therefore, reliance can be seen as extremely important while trust could be seen at least in part as a lubricant for information sharing and transfer.

While knowledge sharing and knowledge transfer are often used as synonyms in literature they are in fact different. "Knowledge transfer is about the ability to take action (transfer) based on knowledge, knowledge sharing about the exchange of the knowledge between two people. Sharing and combining knowledge would seem to come before transfer." McNeish and Mann (2010, page 19) go on to argue that this can lead to improved group processes and business decisions a point supported by Tan and Woodward (2005) and Peters (2008). From this according to Dasgupta and Serasgeldin (2000) a basis for action can be formed. Therefore, according to Strulik (2004) knowledge is seen as a resource also in organisational contexts, which is shaped by trust.

Trust has an impact on innovation within a commercial business organisation (Bidault and Castello 2010). Knowledge sharing was mentioned as a primary source for innovations and raising ideas to colleagues and other team members. On the downside there are authors who claim that too much trust can be detrimental to innovation (Bidault and Castello 2010). Figure 5.1 illustrates

Bidault's attempt to test these relations based on a series of experiments in which 12 groups were enrolled as a sample population.

The sweet spot of Mutual Trust
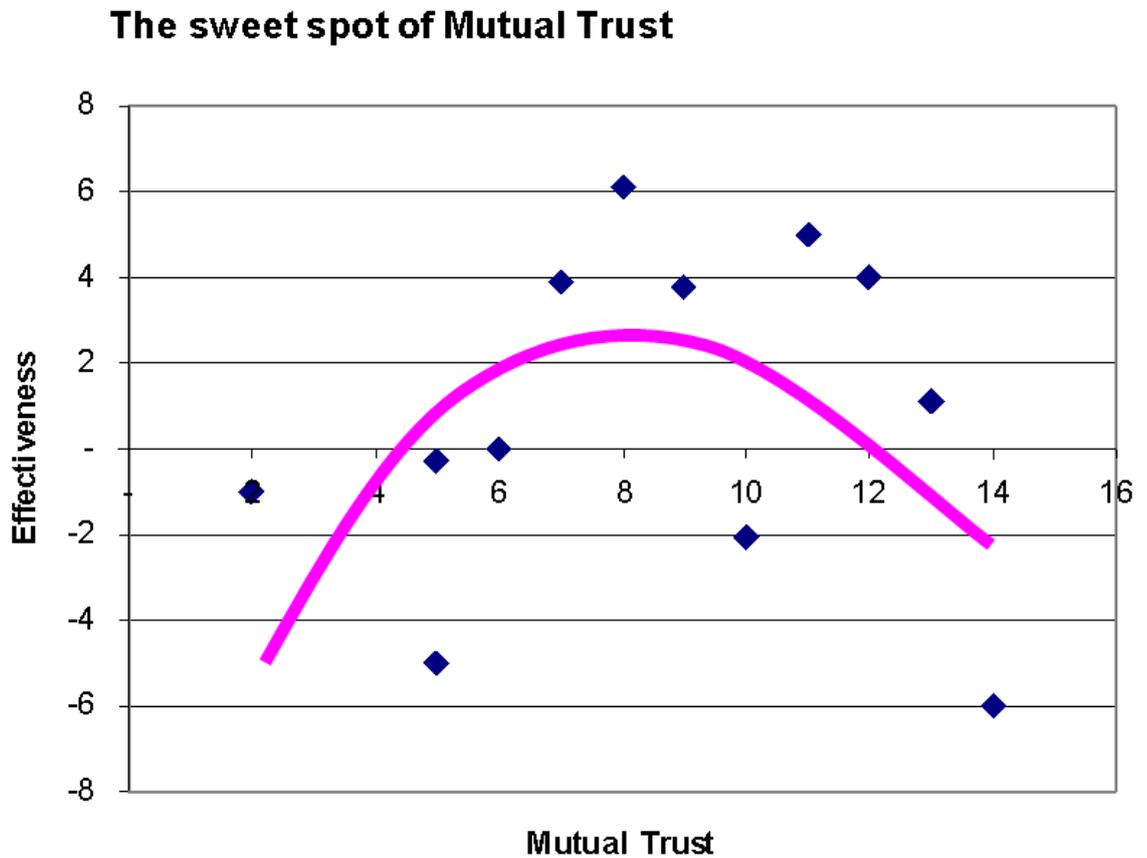
Figure 2.3 The sweet spot of mutual trust

They identified that innovations tend to increase with increased mutual trust but at a point where trust gets very high the ability to innovate starts to decline.

> Bidault and Castello (2010, page 36) stated that: "high levels of trust and mutual caring, individuals might become too accommodating, quickly accepting their partners' ideas and thus reducing the amount of dynamic task-oriented conflict". He assumed that "The team would then have lower creative tension, consequently reducing the partnership's effectiveness".

"Enhanced competitive advantage leading to faster financial development, stronger firm performance (Zaheer 1998, Pavlou 2002) from knowledge sharing has been documented by researchers such as Chow et al (2000). For example, improvement in success from the reduction in the number of days to new product launch has been well-explored (Cooper 2001)" (McNeish and Mann 2010, page 29).

However, as the quality and quantity of knowledge sharing cannot be measured directly (McNeish and Mann 2010) it becomes difficult to prove these relations empirically through a quantified research approach and interpretations should only be made with caution.

However, it can be construed as Homann (2005) discusses that information sharing increases and is the prerequisite for effectiveness and efficiency in an commercial business organisation and public organisation.

2.3.1.2 Decision Making

Decision making is a crucial part in organisations and is impacted by the personal and organisational trust levels. With better information at hand employees will find decision-making easier but will also lead to decisions being made with better judgement and with a higher success rate. Provision of this information is mitigated by trust and can lead to worse decision-making.

Better decision making leads to success that can be measured in factors such as increased sales and profit, and reduced transaction costs within organisations (Luhman 1979).

2.3.2 Trust and Social Capital

"Social capital has been studied by many different disciplines. It has advanced to an important concept in social science" (Torgler 2007, page 66). Therefore, social capital is mainly viewed as a sociological concept, which researches the relations amongst stakeholders in and between different networks (Klaus 2002, Tonkiss et al 2000, Fukuyama 1995, Coleman 1988, Dasgupta and Serageldin 2000). It is often viewed from a societal-group level or a relational level (Cook and Burt 2001) but also comprises research fields such as civil engagement, social participation, and trust (Lin and Erickson 2008). However, the discrimination of these concepts and boundaries are not very clear in literature (Dasgupta and Serageldin 2000).

Social capital is seen by some as analogous with physical, financial and human capital, and it is often considered as more important than physical capital (Fukuyama 1995). It is reported to promote economic and financial benefit (Statman 2009).

Unlike physical and financial capital, social capital is intangible and comes through changes in the relations amongst persons that facilitate action. While human capital is also intangible the capital is imbedded in the person's characteristics and skills to produce action (Dasgupta and Serageldin 2000).

Therefore, social capital is described to be a relational asset and thus a collective asset (Cook et al 2001). "Norms, trust, sanctions, authority and other structural "features" become important in sustaining social capital." (Cook and Burt 2001, page 25). Hence social capital is intertwined with trust.

"Trust and fairness are part of social capital" (Statman 2009, page 93). "Collective assets such as trust, promote the relations and networks and enhance the utility of embedded resources, or vice versa" (Cook and Burt 2001,

page 10). Therefore trust is proven to increase the willingness to undertake shared activity (McNeish and Mann 2010).

Lin and Erickson (2008) reported that normative social capital is seen as a recognition by society that if someone helps another person, he or she will be supported or helped by other people (not only by the person who has helped) in the community or society.

Thus, trust is related to getting access and to creating social capital. For example it could be assumed that a person looking for a job will be more likely to receive assistance (Gayen et al 2010) from others due to a trustworthy relationship and / or the degree of social capital involved. Levin et al (2002) confirmed that and stated that "recent studies have suggested that the presence of an ongoing relationship between individuals has an impact on trust" (Levin et al 2002, page 4).

This has also been empirically researched and validated by Torgler in 2007 who researched trust and social capital in international organisations including the United Nations.

Therefore, following these notions it can be construed that social capital impacts on and is impacted by trust.

2.3.3 Trust and Control

Vosselman and Van der Meer-Kooistra (2008) pointed out that trust and control intermingle in organisations and is often recommended by employees and management (Morris 1995) to serve as a good substitute for control because it reduces transaction costs (Sanchez et al 2012). Most authors argue that the higher the degree of trust in an organisation is the less the costs which are necessary for monitoring and maintaining other control mechanisms (Bijlsma

and Koopman 2003, Cummings and Brommiley 1996, Velez et al 2008, Gao and Zhang 2006).

This hypothesis was perceived as only partly representative of the practical situation of business organisations. As discussed before, the organisational structure or the different dispersion of lateral or vertical trust levels and social networks (Gao and Zhang 2006) can have an impact.

2.3.3.1 Empowerment

Trust helps employees to be motivated. This is reported to lead to better organisational control through control of behaviour (Cadenhead and Richman 1996, Sanchez et al 2012). Increased levels of trust and freedom encourage higher levels of self accountability leading to more involvement in the workplace (Allensbacher 1999 in Sprenger 2007, Anthony et al 2004). It also promotes higher job satisfaction, organisational commitment, low neglect, loyalty, mutual learning, low employee turnover, more internal employee development, higher sales and profit (Bijlsma and Koopman 2003, Kramer and Cook 2004, Sprenger 2007, Sanchez et al 2012, Gao et al 2012)

Increased levels of trust in organisations causes employees to take less sick leave. In a study from Allensbach 54% of the employees of the survey did not have a single day of sick leave while those with lower trust levels and less freedom in their workplace had a corresponding rate of 23% (Allensbacher 1999 in Sprenger 2007, page 144-145).

It also helps employees to become empowered and more motivated in their roles. Findings in Tzafrir's work also indicated that trust exerted a direct effect on Human Resources Management practices and organisational performance (Tzarfrir and Eitam-Meilik 2005).

"Trust can help explain why individuals have been willing to follow the visions of leaders, in some case placing their fate (and sometimes lives) in the hands of leaders in contexts ranging from modern organizations to ancient armies…" (Kramer and Cook 2004, page 21).

Trust as an antecedent to employee extra-role behaviour was also exploratively researched in non-profit organisations by Reychav and Sharkie (2010). Organisational trust levels were seen to be "strongly related to perceptions of management's trustworthiness. The higher the assessment of management integrity and dependability, the more likely it is that this will lead to increased extra-role behaviour that will benefit the organisation" (Reychav and Sharkie 2010, page 239).

In the study Employee Extra-role Behaviour from Reychav and Sharkie in 2010 in Figure 5.2 the results show:

a.) higher participation in decision making by employees of 0.89 and

b.) more contribution from autonomous employees 0.66 while

c.) instrinsic job motivation 0.4 and

d.) the degree of sharing knowledge 0.44 were found to be weaker indicators.

Empowerment / Extra Role Behaviour
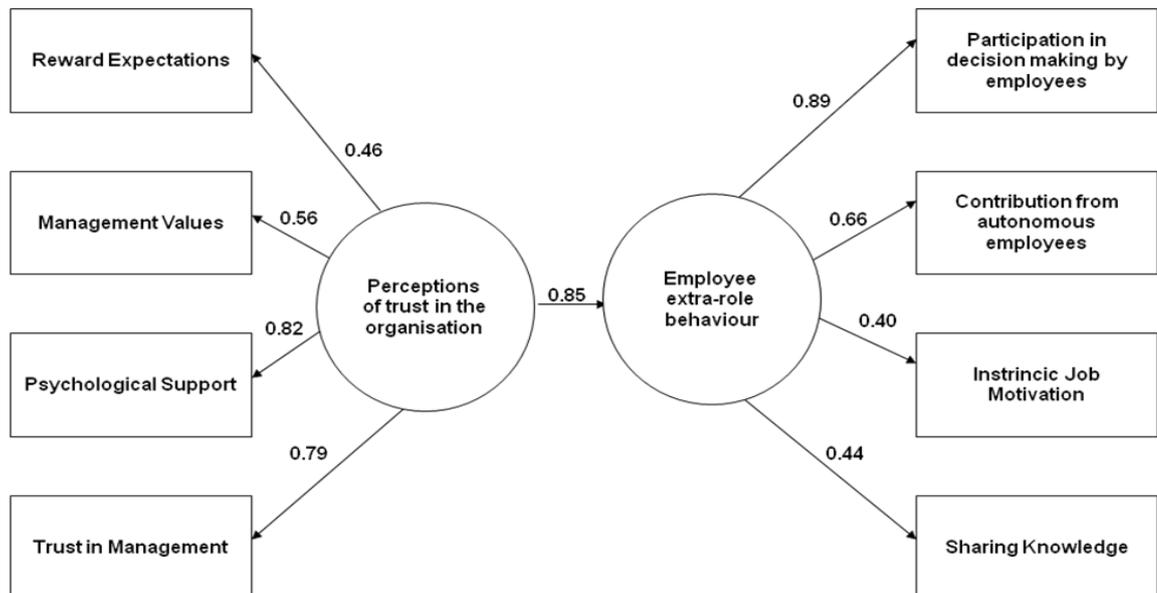
Figure 2.4 Empowerment / Extra Role Behaviour (Reychav and Sharkie 2010, Page 230)

Following the principles of intrinsic motivation (Thomas 2002) it could be construed that intrinsic motivation itself cannot be influenced by empowerment or extra role behaviour. Intrinsic motivation is mainly not influenced by external stimuli as it derives from the general characteristics of an individual and the general willingness to learn and perform (Deci and Ryan 1985). The model might not be valid in this regard. In fact, it could be argued that intrinsic motivation might be more a reason to trust and to increase trust levels and not so much an effect of trust.

However, the effects of intrinsic motivation can more likely be observed if trust replaces control within an organisation.

Deci et al defined "intrinsic motivation for an activity when a person does the activity in the absence of a reward contingency or control" or as "free choice measure" (Deci and Ryan 1985, page 34) implicating that intrinsic motivation can only turn into action if controls allow it to happen. However, trusting as a substitute for controlling infers that a trustee regards a trustor's goal as his or

her own goal. Thus the trustee's action is also controlled. Therefore, it could be construed that the effect of intrinsic motivation based on extra role behaviour was probably lower in Deci's study. However, according to Sprenger there is a relationship between the degree of freedom and workplace satisfaction (Sprenger 2007).

Sharing knowledge as described to be discretionary in Reychav's research as it is not part of a formal employment contract was also seen as a weaker indicator for extra-role behaviour and trust relationship (Reychav and Sharkie 2010). This could be because sharing knowledge depends on a lot more factors than purely organisational trust levels and/or empowerment. Factors such as personal trust, existing trust relationships and target conflicts might overlap.

> However, Kramer and Cook (2004 page 24) also stated that: "Almost all research to date has been based on cross-sectional designs on which the direction of causality cannot be inferred. For instance, rather than trust impacting job performance, it is possible that for some employees, higher job performance inspires increased trust in one's leader. What is needed is experimental and longitudinal research designs that empirically test causality"

Lorenz and Lazaric view trust as having mixed outcomes. They illustrated that trust and blind trust can have positive as well as negative effects for trustors. Following his example where a company (trustor) hires a consultant (trustee) and empowers them with tasks, the effect can be detrimental for the organisation in the long run.

Possible outcome of trust

Example 1: Engaging a consultant to facilitate an organisational learning process

Firm members' trust in consultant	Trust as prerequisite	Trust as outcome	Trust as obstacle
Trust in competence	If members believe consultant is capable of helping firm, they will agree to participate	After exposure to consultant's skills members' trust in his/her competence increases	Excessive dependence on consultant can inhibit taking responsibility for own learning
Trust in intentions	If members believe consultant will not betray the firm or its members they will participate	As a result of working together, members become increasingly comfortable with goodwill and integrity of consultant	Blind trust in his/her intentions leads members not to challenge or confront consultant thereby reducing opportunities to further their own learning

Figure 2.5 Possible outcome of trust (Lorenz and Lazaric 1998, page 257)

2.3.3.2 Reduction of Opportunism

Trust is also suggested to reduce opportunism within an organisation (Zaheer 1998, McNeish and Mann 2010). Additionally, trust can enhance fair operations in some cases (Tan and Woodward 2005).

This has in part been explained in more detail for example by McNeish who describes that: "Groups can learn as much from knowledge shared about other's failures as they can by learning about success. This requires a climate

of trust that this knowledge will not be exploited by others as weakness" (McNeish and Mann 2010, page 25).

However, while McNeish describes the need for trust he missed describing the exact cause of trust for reducing opportunism. Someone could hypothesize that the reduction of opportunism happens mainly through the overlapping of existing trust relations between a trustor and a trustee with changing roles and prospects of further individual advantage within relationships. A trustee acting opportunistically in one trust relationship is likely to face the danger of being viewed as opportunistic in all others and if not a certain underlying doubt by different trustors is at least likely to remain.

If this is true, it could also be assumed that for topics which are not so important for a trustee and/or a trustor, lower opportunistic behaviour can indeed be observed. However, overall it could be construed that opportunistic behaviour cannot be completely reduced when certain topics are viewed to be very important and overturning all pre-existing trust relations and future prospects of relations. Following the notions of game theory a trustee or truster should try to operate opportunistically if there is no prospect of future continuation of cooperation.

2.4 Summary

The main findings of this literature research were information about trust dimensions, organisational tensions, impact of trust, various approaches to measure trust and differences between organisational types as well as personal trust.

These are partially related to the aims and laying the foundation for this research. However, the aims of this research are more in-depth and more specifically to shed more light on the relations of trust on organisational performance and the way Management can foster trust relations. This also aims to understand differences of organisational types and interacting impacts of populations such as executives, management accountants and line managers.

Additionally, in order to measure trust more comprehensively it is necessary adopt principles of different schools. This later supports the reliability and validity of the trust measure adopted in this research. The type of intraorganisational studies and the lack of authors having done quantitative studies on trust in relation to Management accounting in organisations dictated that a methodology had to be developed to make quantitative study possible within organisations when sample size is low.

The literature research was partially not sufficient to provide answers to all questions raised and resulted in a number of goals partially unaddressed and unanswered. There were a number of gaps in literature but not limited to the ones mentioned below:

No multidimensional trust measure could be found, which is comprehensive enough to accommodate for different schools of thought. The complex relations of social network impact on trust and management accounting is not addressed sufficiently.

Additionally, trust and management accounting are not well enough explored yet. Impact of trust on organisational performance is partially not yet explored especially taking in account the function of management accountants.

Not much literature can be found for exploring the trust construct within organisations. Most authors also forwarded qualitative approaches but not many attempted quantitative approaches likely because of lack of sample size. So it can be construed that there is a lack of quantitative approaches in literature.

Comparisons between the private an public sector has been done before but there are aspects which have not found access in the literature yet. In particular the impact of management accounting has not received much focus and the methodology used was mainly of describing less of investigative nature.

Trust and socio-economic characteristics have not been explored very well yet. There are basic socio-economic conditions, which are assumed to relate to trust and which make trusting easier or more difficult. These relations have not been shed light on in literature sufficiently either.

Chapter 3

3 Conceptual Models

In this chapter the models and research hypotheses are developed based on the literature research in the previous chapter. Several distinctions will be made of trust and its concepts to be able to have a foundation for the models.

The trust dimensions are modelled into a multidimensional trust measure followed by impact of psychology and propensity to trust forming a grant trust model which attempts to explain the trust level of an organisation. Later a model is established, which attempts to explain the impact of trust on organisational performance based on the grant trust model. The research hypotheses to be investigated are then described below in every model.

This chapter is about identifying existing models and creating new models. It starts with defining elements of trust, which need to be discriminated from another. Based on this and the findings in literature research a trust definition is developed, which is modelled and later complimented by aspects of psychology.

Then models for organisational tensions and propensity to trust are discussed and developed and their elements brought into context with organisational performance. The type of organisational performance will also be defined later in this Chapter under the section related to the impact model.

3.1 Discrimination trust, cooperation, reliance and confidence

A critical element in the studies of trust is the unequal social or organisational status of the grantor and grantee of trust. If the trustee is in a position of dependence with the trust grantor the character of the trust relationship is described to be different than a situation where truster and trustee have similar power or status. Following the notions of Dietz and Hartog where they described the different forms of trust for their model, trust is not always granted

based on moral sense, but often on behavioural sense. Thus he assumes that giving trust to people is not always influenced by moral obligations acting upon the trustees (Dietz and Hartog 2006).

Trusting a trustee when one is forced to do so is referred to as reliance by most authors, to indicate that the belief in benevolence and competence may be absent, while the behavioral patterns are present (Smith 2005, Ebert 2009, Tonkiss 2000).

Trust(worthiness) as a moral attribute and trustworthiness as merely reliability result in the same behavioural pattern (Baier 1986). In real life this can be observed between a superior and a subordinate. In this situation the subordinate is often dependent upon the goodwill of his or her superior and the subordinate has to trust that the superior follows a certain positive path. "Malhotra and Munighan (2002) confirmed that using binding (i.e., formal) team contracts to control team cooperation led to lower intra-team trust than the use of non-binding (i.e., informal) team contracts. Binding contracts caused team members to attribute cooperation to the formal contract, while a voluntary adherence to the non-binding contract was seen as a signal of inherent trustworthiness." (Hartmann 2009, page 724)

Some philosophers and scientists argue that most trust relationships are actually wrongly perceived to be trusting or distrusting. In most cases these are relationships of reliance (Kramer and Cook 2004, Fukuyama 1995). Philosophers such as Baier have made a distinction between trust and reliance by saying that "trust can be betrayed, whilst reliance can only be disappointed" (Baier 1986, page 235)
Reliance often gives rise to a trustful and confident commitment to another (Desportes 2006).

"Though more narrow economic perspectives conflate confidence with trust" (Tonkins et al 2000, page 154) the similarities between trust and confidence according to some authors have both been researched and authors appear to

agree that they have differing meanings (Ebert 2009, Tonkiss et al 2000, Desportes 2006, Seligman 1997, Kramer and Cook 2004). "Confidence implies less emotional intensity, frequently provides stronger cognitive grounds for certainty and the content of experience, thus performance" (Ebert 2009 page 7). Tonkiss describes the difference between trust and confidence as: "trust cannot be demanded, only offered and accepted" (Tonkiss et al 2000, page 20). Meaning, confidence can be demanded, assured and realised often by reliance while trust cannot be demanded only fostered. "Luhman argued in 1979 that when most of a trustee's behaviour can be convincingly explained (and planned for) in terms of their role incumbency, trust is not necessary - whereas confidence in systematically defined normative patterns of behaviour is sufficient (Seligman 1997)" (in Tonkiss et al 2000, page 16).

Relations of confidence are strongly linked to accountability, contractual agreements with sanctions and "the spirit of voluntarism, or what was earlier referred to as mutuality and reciprocity, is lost" (Tonkiss et al 2000, page 168) on a trustees side (Kramer and Cook 2004). Trust requires the recognition and acceptance of risk while confidence does not (Kramer and Cook 2004). In the context of discriminating between trust or confidence relations the difference between doing good and doing well and its analogy could be helpful. The first inspires trust while the latter inspires confidence (Tonkiss et al 2000). However, what Tonkiss perhaps missed in his work was to sufficiently discriminate confidence with reliance.

Zucker in 1986 introduced the concept of "system trust" as the equivalent of confidence (Kramer and Cook 2004) but not much argument has taken place and this statement was not explained in more detail. When following the notions of most authors who mentioned that the distinction between trust, reliance and confidence is well researched, it appears in essence that differences are proven. The exact distinction between confidence, reliance and trust is not elaborated, empirically proven and explained well enough in literature. It appears that these differences are only illustrated on a semantic level.

Cooperation does not necessarily require trust because a party is not necessarily at risk every time a cooperation occurs. Trust always requires a certain degree of risk to exist. However, trust is an important factor for cooperation and works as a lubricant and often as a main motitivator for cooperation – but not in all cases.

3.2   Trust Dimension Model

In further attempts to elaborate a common, multidimensional accepted definition of the trust construct several authors (Tyler and Kramer 1996, Busco et al 2006; Bachmann 2001, Dietz and Hartog 2006, Tzafrir and Doland 2004, Cummings and Brommiley 1996, Mayer et al. 1995) tried to bring the different definitions in context with each other and thereby discovered several trust dimensions, which appeared to be relevant to further explaining the trust construct across different science fields but particularly in organisational science. Based on the notion of vulnerability, expectation and beliefs (Deutsch 1973, Luhman 1979, Moorman et al 1992) the following definition was initially developed by Tyler and Kramer in 1996:

> "Trust is one party's willingness to be vulnerable to another party based on the belief that the latter party is (a) Competent, (b) Open, (c) Concerned, (d) Reliable**"**

This definition was empirically tested by Tyler and Kramer in 1996 through interviews and questionnaires in a qualitative research study with 33 managers of existing commercial business organisations. The managers used several adjectives to describe sources of trust. Tyler further conceptualised these adjectives into different dimensions (competence, openess, being concerned and reliable) which are seen as important factors for trust determination. These dimensions appeared to be the drivers of trust creation or deterioration as they were observed to strongly be linked with the overall levels of trust within organisations.

Tzafrir and Doland also tested their own set of content components having interviewed 185 employees to discover inductively people's common understanding of what constitutes judgements based on trust.
They identified that the definition does not mention the level of cooperation of the trustee (Tzafrir and Doland 2004). A trustee could be competent, open,

concerned and reliable etc. but following another agenda or has different beliefs and thus is less likely to cooperate.

Therefore, attempting to reflect practice at best, the level of trust should also be based upon the notions of other authors who explicitly point out positive expectations with regards to the outcome, intentions and behaviour of the trustee (Dietz and Hartog 2006). Further familiarity and integrity are mentioned by several authors (Dietz and Hartog 2006, Zucker 1986, Mayer 1995, Zhou et al 2005) as a lubricant of trust. For example Meyer proposed three trust domains: ability, benevolence and integrity (Mayer 1995)

Most of these trust dimensions are insufficiently defined in literature and also dependent upon the definition in different science fields. In the previous research done by Tyler and Kramer (1996) and Dietz and Hargot (2006) these dimensions appear insufficiently defined and vague, sometimes contradicting and interdepending (Ross and LaCroix 1996) and thereby perhaps poorly reflecting practice.

Hence, following the notions of the other authors, a trust definition cannot be simple, as a lot of dependent and independent factors appear to play an integral part for trust and reliance. A possible definition could be summarised as the following.

> Trust is one party's willingness to be vulnerable to another party based on the belief that the latter party is (a) Competent, (b) Open, (c) Concerned, (d) Reliable, based upon positive (e) expectations of the outcome based on outside circumstance and (f) past outcomes, (g) intentions, (h) behaviour, (i) integrity (Fairness), (j) loyalty, (k) familiarity and/or (l) honesty of another.

This definition comprises all trust dimensions found in literature so far but could be devalued by other unknown dimensions, which have not been found yet.

Further the dimensions are overlapping to varying degrees depending on the individual situation.

In any case the above described trust dimensions are not considered equally important in all situations. They are suspected to be interdependent and the precise combinations are idiosyncratic to the circumstances and to the trustor (Lewicki 1996). In some cases it is reasonable for a trustor to require an emphasis of the trustee on competence when competence is required and on loyalty when loyalty is required.

The weighting of the different Trust dimensions is defined by the trustor's judgement of the particular case (Ross and LaCroix 1996). This judgement often depends on the intuition (gut feeling), a calculative approach and / or based upon experience of the trustor and can be either subjective or objective in nature.

3.3 Conceptual Grant Trust Model

In case reliable and valid information are not available or the efforts and expenses in obtaining these information are higher than the risks involved by trusting a trustee, the trustor is likely to avoid looking for reliable information and instead will look for "trustworthy" trustees who could minimise possible forecasting errors. The trustworthiness of the trustee is understood as a complex compilation of judgements by the trustor on different characteristics of the trustee (Dietz and Kramer 2006).

The judgement of what attribute is considered crucial to reduce the likelihood of a forecast error is expressed by the trustor's perceived weighting of the trust dimension. Depending on the situation the trustor usually considers several trust dimensions as more important than others. The underlying assumption is that the trustor will make a rational and economic decision in his favour.

In an organisational context a trustor might look more for loyalty and integrity (Zhou et al 2005) when sharing information while for example in a personal relationship when lending a car to the trustee he or she might focus more on the trustee's competence or driving skill.

Hence, if the trustee had a record of accidents before the trustor might be more likely to refuse to lend the car as the possible gains of social capital (Tonkiss et al 2000, Fukuyama 1995) would not match the possible risks involved.

In theory these weightings can vary from situation to situation and sometimes intermingle with existing trust relations.

Additionally, though criticised by many authors (Neuberger 1974) the motivator-hygiene theory of Herzberg could in essence also play a role in creating a trust relationship (Weber 2008). Herzberg focused on job satisfaction in the workplace (Herzberg 1993) but his theories were transferred, applied, tested, modified and disputed into a vast array of fields in organisational and social science.

Ebert stated: "…by transferring Herzberg's motivation-hygiene theory to the content trust (instead of, as originally, to satisfaction) hygiene factors become attributes that have little impact on global trust…" (Ebert 2009, page 68).

That might mean that there exist - with varying degree depending on the trust relation – trust dimensions, which perhaps can be perceived to be "hygiene factors" (Weber 2008, page 380). Thus, they only influence a trust relationship if they are not provided unlike motivational factors.

Ebert calls hygiene factors also "preconditions" (Ebert 2009, page 68) mostly likely to reflect a certain degree of falsification of her theory. Similarly, Lorenz in essence mentioned a similar idea though it was not formulated as well: "trust as prerequisite […]" (Lorenz and Lazaric 1998, page 259) and draws the line that certain trust dimensions must exist to start a trust relationship while they become less important or sometimes even detrimental later on. Weber (2008) also suggested that there are certain criteria which a trustor requires to have provided. However, exceeding these criteria will not help a trustee to become

more trustworthy thus lacking these criteria will make a trust relationship unacceptable for a trustor.

Hygiene factors are often only perceived to be crucial or notable when they are lower (Herzberg 1993). In this case they are reported to create distrust (Ebert 2009).
Then a trust relationship would deteriorate even though other trust dimensions could outweigh the hygiene factors.

Motivational factors could increase trust levels while hygiene factors cannot (or only to very limited degree). For example in some cases, for many people, honesty is perceived as a hygiene factor to start trusting. Somebody who lies will mostly not be trusted as his or her intentions appear not to be benevolent. But knowing that the trustee is in a target conflict situation - for example in one of reliance - might change the perception of a truster.

However, if a trustee has already given his word not to speak about certain topics to other trustors, his integrity might be challenged (target conflict) and he cannot be honest and sometimes will not even be able to mention these target conflicts to other trustors. Thus these trustors will perceive his behaviour as "dishonest" and then will be less likely to join a trust relationship.

The model in Figure 3.1a illustrates the process from the trustor's perspective. It describes the decision making process of the trustor when trying to control and or predict future events. The trustor intuitively or consciously (through a calculative approach) decides whether trusting a trustee is more economical than finding reliable information to predict or control a future event (Tomkins 2001, Dietz 2002). The trustor will try to compare the efforts and expenses of achieving reliable and valid information versus the likelihood of untrustworthy behaviour from the trustee and the extent of possible damage.

Trust grant model
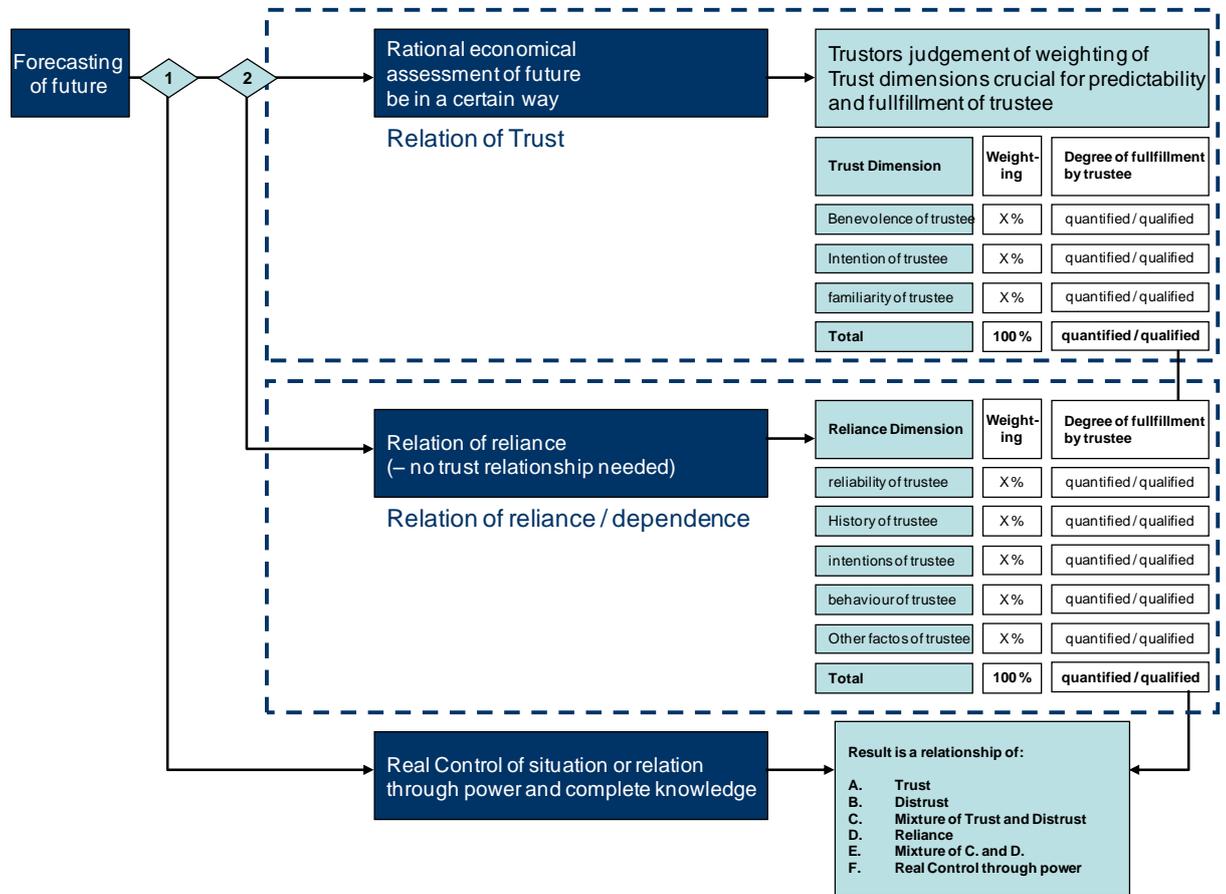
Figure 3.1a Grant trust model

The Trust Dimension shown here are not complete in this figure but are available under trust Dimensions in the literature

Step 1: Assessment of to what extent achieving real control and accurate information is more rational (economical rewarding/costly and risky) or a trust and / or relation of reliance is more practical. A mix is also possible based on multifaceted Dimensions.

Step 2: The degree of how much the prediction is trust and/or reliance based

As previously mentioned the judgement as to how trust is granted depends mainly on the situation. Dietz and Hartog state: "Indeed, one future research agenda would be to test which of these is most significant and in what circumstances. Very little research assesses whether the importance of these components varies where different actors in organisations are concerned. Can a generally applicable measure be conceived and tested?" (Dietz and Kramer 2006, Page 572).

This model is highly rational and neglects emotional and effect based elements important for trust creation. Therefore there is a need to adapt this model. This will be discussed in the next section.

3.3.1 Impact of Psychology

"Trust is a complex, psychological phenomenon, which cannot be explained monocausally" (Weber 2002 from Lenz, page 129).

If the economic model (Fetchenhauer and Dunning 2009) claims to reflect practice at best it must consider the impact psychology plays when human beings make decisions to trust or distrust others (Kramer and Isen 1994).

In psychology the cognitive abilities of humans are described to be limited especially if the capacity of time to make a decision and things have to be decided quickly (Weber 2008). A trustor is "an intuitive auditor, one who mentally keeps score of past occasions" for example: "whether the organisational hierarchy has been trustworthy or untrustworthy" (Kramer 1997 from Kramer and Cook 2004, page 138).

Weber in 2005 mentioned that the concepts of trust to be reasonable to use when cognitive abilities are limited and too costly or time consuming to use (Weber and Meyer 2005).

Having limited cognitive capacities humans often have to clear their memory to make space for new challenges. Therefore, psychologists argue that a calculated or rational approach (Williamson 1993) in all its facets is thereby not manageable (Nooteboom and Six 2003) though they agree that it is considered the most effective (McAllister 1995).

In a social context decision making has to be made efficient and effective to be successful. Efficiency is seen to involve time and effort when it comes to decision making whereas effectiveness is the quality and correctness of the decision. Therefore, humans tend to grant trust more out of routine, though being aware of underlying risks or adverse effects (Nooteboom and Six 2003). Noteboom also states: "evolutionary psychology suggests that a tendency towards reciprocity is in our genes, since it was conducive to survival in the ancient hunter gatherer societies in which humanity evolved" (Nooteboom and Six 2003, page 17). Therefore, it could be assumed that trust relationships also gave humans an advantage during evolution (McAllister 1995).

Even the mathematician Lorenz states that: "neither transaction cost economics nor agency theory can explain trust as a coordination mechanism in inter-firm relations" (Lorenz and Lazaric 1998, page 68).

Therefore, following the widespread agreement in literature it can be construed that in many cases judgement of trust granting is influenced by psychology (Fetchenhauer and Dunning 2009). This could lead to the same result as a calculated approach (Williamson 1993) but can also lead to judgemental errors (Nooteboom and Six 2003). "They may lead us to jump to erroneous conclusions and may produce prejudice. Evidence of untrustworthiness may be ignored as a result of cognitive dissonance" (Nooteboom and Six 2003, page 17).

These judgemental errors can then lead, for example, to wrong decisions from an economical and rational standpoint (Weber 2008).

This judgemental error can be caused by commonly understood psychology concepts such as subjective judgements (Weber 2008) resulting from a cognitive bias (Zimbardo 1995) which describes the tendency that an individual or a group systematically makes irrational or wrong judgements and / or confirmation biases (Plous 1993), where a individual or a group tends to search only for information that acknowledges a predetermined perception.

The pygmalion effect also known as self fulfilling prophecy (Sprenger 2007) can influence psychology. "Menschen neigen dazu, sich so zu verhalten wie sie glauben, dass es von ihnen erwartet wird. " (Humans tend to behave as they believe it is expected from them to behave, Sprenger 2007, page 217). It is described that for example employers tend to be more determined to communicate low expectations than high expectations to employees. This can result in a perception by the employee of being perceived incompetent, less able or unreliable to fulfil a role and thus insufficiently trustworthy (Sprenger 2007).

In economics, trust is described to be more calculative. Several authors (Williamson 1993, Doney and Cannon 1997) argue that within the calculative process of trust building, a trustor develops trust through calculating his opponent's costs and gains resulting from a breach of his or her trust. Provided the net gain is negative for the opponent, he or she is considered trustworthy.

The calculative approach for trust creation is seen by most authors (Dietz and Hartog 2006, Sprenger 2007, Tyler and Kramer 1996) to work better for formal and detached trust relationships, whereas the intuitive approach seems to function better for deeper and more affective forms of trust such as personal trust relationships. In personal relationships an obvious calculative approach is viewed by the trustee as a social affront (Weber and Meyer 2005) against the trustee sometimes resulting in deterioration of trust levels (Klaus 2002). In this case the trust relation can be defined as a partnership of convenience.

Whether or not the reasoning in psychology, agent theory or economic literature is true and reflective of practice remains mainly unclear in the literature. It could

be speculated that the way trust is granted in psychology is also through a calculative approach though it is expressed as a gut feeling. Someone could hypothesise that the decision is based on a quick calculation of their own criteria and weightings.

Whether the degree of vulnerability of the trustor influences the way a decision is made remains open. It could be assumed that where vulnerability is high a more rational economic approach is usually chosen while for trust relations with a lesser degree of vulnerability the faster and more efficient gut feeling approach can apply.

Emotions were described by Noteboom to take over and to trigger reflexes or attention when we find ourselves in a survival or death scenario (Nooteboom and Six 2003), which could relate to trust and distrust being steered by instincts and/or psychology.

Williamson also agreed that personal trust is nearly non-calculative (Williamson 1993).

Hence, following the notions of Williamson and Hardin one could assume that the calculative approach prevails less where relationships show more personal instincts or emotion related characteristics.

It can also be assumed that in case of more formalised relationships the degree of emotions is less common and a calculative approach is more acceptable throughout the business world with varying degrees between different organisations and cultures. There is a general tendency in worldwide business that a calculative approach in approaching or maintaining relationships is more acceptable and engenders less conflict.

Nooteboom states: "rationality and emotions are intertwined" and that "not only value judgements but also interpretations and even perceptions are emotion-laden" (Nooteboom and Six 2003, page 17). Most approaches are likely to be mixed and not completely rational or psychologically based gut feeling. They tend to be made on intuition and a concept of rational thought (Weber 2005).

A model comprising both psychology and the concepts of game theory and economics might take the following form:

Grant Trust Model including Psychology
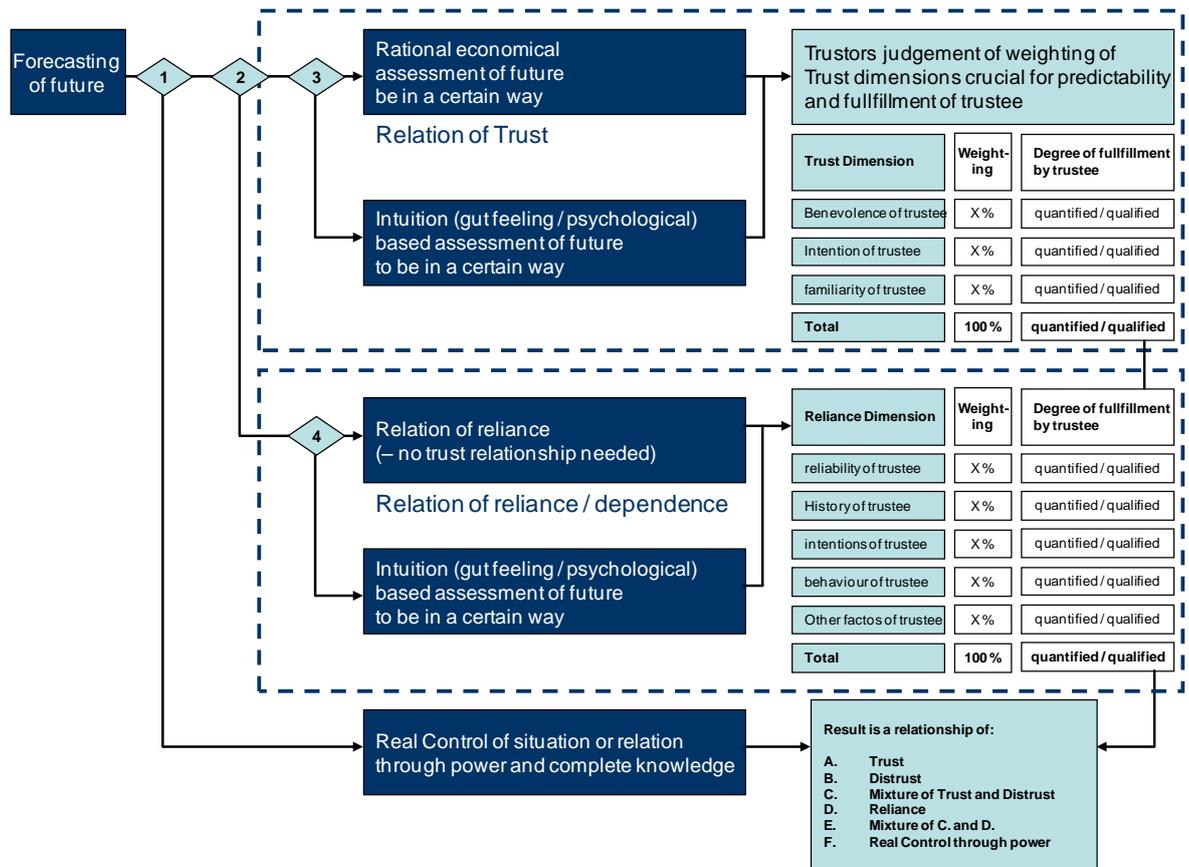
Figure 3.1b Grant trust model including psychology

The Trust Dimension shown here are not complete in this figure but are available under trust Dimensions in the literature.

Step 1: Assessment of to what extent achieving real control and accurate information is more rational (economical rewarding/costly and risky) or a trust and / or relation of reliance is more practical. A mix is also possible based on multifaceted dimensions.

Step 2: The degree of how much the prediction is trust and/or reliance based

Step 3: The degree of how much the prediction is based on psychological trust or rational identified trust

Step 4 The degree of how much the prediction is based on psychological or rational identified reliance

The decision is also influenced by already existing relations and the possible access to future resources, which are only available through a trust relation.

The psychological aspects used in this thesis are related primarily to how trust is given in either a purely cognitive-, a purely affective- or a mixed based mode. Additionally, the psychological propensity to trust is investigated in the section propensity to trust and socio demographic characteristics which might be influencing the state of mind and psychology were also investigated by an investigation within the European Quality of Life survey. Nevertheless, there are many aspects in psychology, which were not covered in this thesis and there are likely aspects, which are unknown.

3.3.1.1 Propensity to trust

Other authors implied that different individuals have a different propensity to trust based on their personal development experience, cultural background and personalities (Rotter 1990)

What also appears to be different in psychology compared to the other schools of thought are the suggested definitions of high and low trustors (Hardin 2002). A low trustor is defined as somebody who is not trust-worthy and a high trustor is seen to be trustworthy. The embedded conclusion is that somebody who is not trustworthy in return will not trust others. The underlying assumption is that someone who is not trustworthy is less likely to grant trust to others. The low trustor mirrors his or her own attitude with the attitude of the trustee (Kramer and Isen 1994, McKnight et al 1998, Mayer et al 1995).

The trustor tends to be believe that others follow similar behavioural patterns. It is a bias or self prejudice. There is no tendency that high trusters are more likely to trust blindly than low trustors (Rotter 1990). Yamagishi (1998) argued that high trustors are more sensitive to information suggesting the trustworthiness of a specific person and can predict more accurately whether or not the trustee will perform trustworthy actions (Yamagishi 1998 from Lin and Ericksson 2006). Hence, it could be construed that high trustors create higher trust levels in organisations than low trustors.

Model Impact of High and Low trusters on Performance
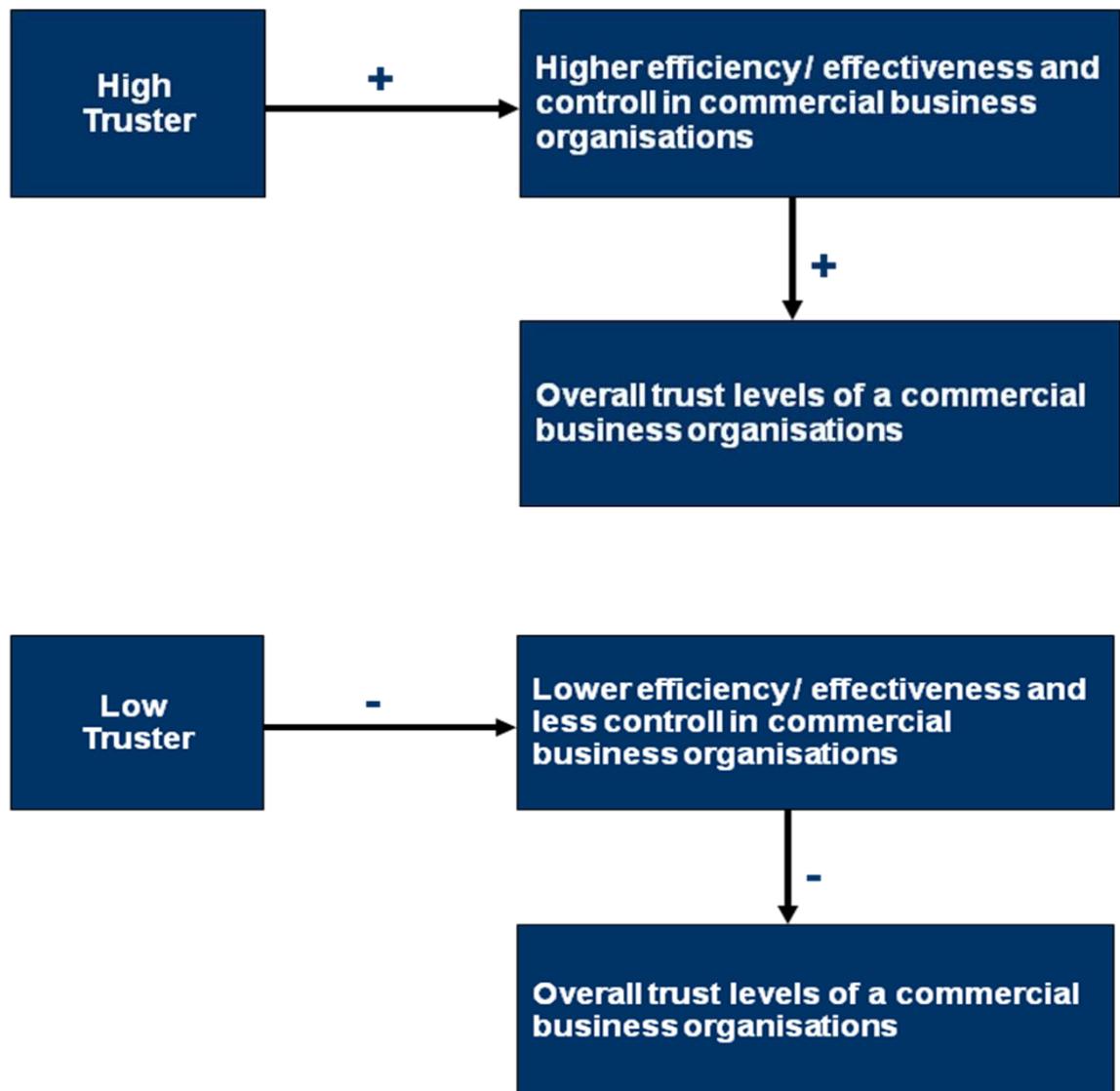
Figure 3.2 Model impact of high and low trusters on performance

This model leads to a set of testable research hypotheses, which are illustrated below.

H[1P] = High Trusters contribute positively to trust levels in organisations

H[2P] = Low Truster contribute negatively to trust levels in organisations

3.4 Conceptual Model - Organisational Trust

This section focuses on the identification and creation of organisational trust models.

At first the organisational tension model is conceptualised and research hypotheses are formed. Similarly, models of propensity to trust, impact of trust and social network analysis are formed.

3.4.1 Conceptual Organisational Tension Model

Several organisational tensions could influence the relations and trust levels between management accountants, line managers and senior management.

Zucker (1986) was amongst the first to establish a theoretical framework for trust building, which up till now has been referred to in numerous articles.

She further categorised the different ways of trust building and summarised them into three different forms: (1) process-based, (2) Institution-based and (3) characteristics-based.

The reason for discriminating personal trust from the other two forms is to reflect that trust between individuals is often seen to be operating differently to the trust between individuals and systems and processes.

Characteristics-based trust is based on social expectations. According to Zucker this form of trust can arise through commonalities of character, common beliefs or belonging to specific cultural; political, religious or ethnic groups. (Zucker 1986, Osterloh and Weibel 2006, Dietz and Hartog 2006). The logic behind that is that a trustor grants trust based on similarities with the trustee and assumes that the trustee is then more likely to be trustworthy. An employee with strong socialist opinions may be rather less trusting of managers than someone with a more right wing, business-oriented sympathies (Dietz and Hartog 2006) and might trust other employees more.

Process-based trust is basically the most direct form of trust building. It is based on prior experiences and historic exchange and the expectation of future continuation. In organisations process-based trustworthiness is developed over time based on prior experiences in various events.

Institution-based trust is also known as system-trust and usually ties to social structures such as associations and firms but also to education, competence and regulations (Bachmann 2001, Busco et al 2006). System trust is also known as institutionalised trust (Dietz and Hartog 2006) and reflects the belief of individuals (trustors) into the abstract system (trustee). An abstract system can be a government, a board of directors, public pension schemes, banks and a legal entity or others.

It is also referred to as trust in references from companies or stakeholders in companies and as the level of fairness in a system and fairness of distribution of resources within an organisation.

Hence, organisational tensions can be hypothesised in research context as following:

H[1T] = Internal conflict of interest lead to tensions between line management, management accountants and executives

H[2T] = Organisational culture differences lead to tenstions between line management, management accountants and executives

H[3T] = Lack of personal trust between individuals leads to tensions between line management, management accountants and executives.

H[4T] = If tensions are high it influences trust negatively and vice versa.

H[5T] = If tensions are high it influences performances negatively and vice versa.

3.4.2 Conceptual Model Trust and Organisational Performance

The model below was identified for hypothesis building in research into interactions between Management Accounting, Senior Management and Line Management.

Performance in this research is defined as the perception of performance of survey participants in their respective organisation in contrast to other competitors. In this research there are also measures to understand performance in a different way. For example also used in this research are proxies for performance, which use a different approach: sustainability and successful relationship building. Both proxies are further outlined in the methodology chapter. However, this shows that performance is difficult to be captured and measured. This research had to define type performance for this research being well aware of possible limitations on these multidimensional constructs.

3.4.2.1 Conceptual Impact of Trust

Garrison et al tested several hypotheses with regards to trust. They also tried to test their hypothesis "The more trust among distributed team members, the higher individual team member performance" (Garrison et al 2010, page 39). The results showed that a direct relationship exists and that higher trust influences individual performance positively.

Additionally, in Garrison's model, trust was identified to strongly impact group cohesion positively. As group cohesion itself is also seen as a driver of individual performance, trust also has an indirect impact on the individual performance of team members. In order to test these findings Garrison's model will be adapted to accommodate the aspects of impact on trust in an organisational environment.

The following aspects are explained below and are modelled into the impact on the trust model.

Transaction cost

- Search costs (expenses incurred in researching at special organisations or institutions, or for the use of telecommunication, online services, publications or consultants)

- Information costs (expenses incurred when dealing with problems that disturb the exchange of information)

- Decision costs (expenses related to arriving at shared agreements amongst partners). Decision costs may also be caused by contracts not fullfilled in the way they were negotiated, or by contracts not closed in the intended form.

- Handling costs (from the management of operations).

- "Adjustment costs (e.g. from the implementation of new laws or new policies, e.g. IT standards)", (Bardy 2006, page 174)

Control

- Trust is posited in the literature to create additional control within commercial business organisation and public organisations

Access to resources

- Trust is seen as a way to get access to resources which may otherwise be not available

The above mentioned factors are now illustrated and summarised in Figure 3.3 below. The figure incorporates the main elements of trust which impact performance in organisations discussed in the above section. The research hypotheses are explained in greater detail in the section which follows.
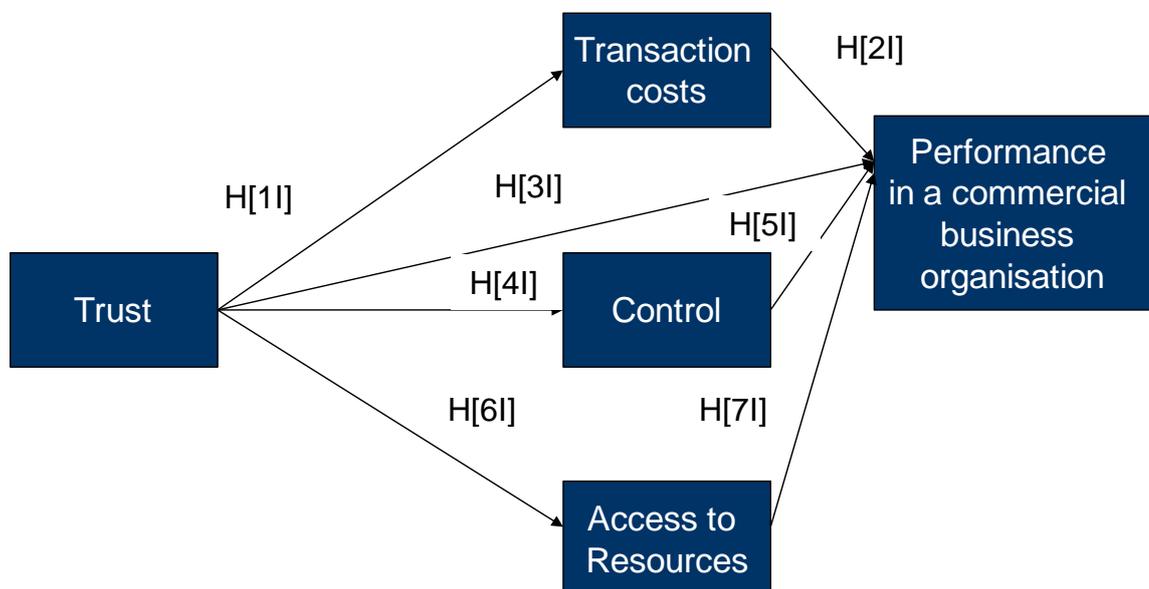
Figure 3.3 Impact of trust on performance of organisations

The Figure 3.3 forms the basis of the analysis by addressing the Research Hypothesis below. The figure theorises that increased organisational trust levels have a direct and indirect impact on performance. The illustration is twofold. Hence, increased trust can improve access to resources, reducing transaction and improve control while decreased levels of trust cause the opposite.

H[1I] = The level of trust between Management Accounting, executives and line managers impacts transaction costs

H[2I] = The level of transaction costs impacts the efficiency and effectiveness in organisations

H[3I] = The level of trust directly influences the performance within an organisation

H[4I] = The level of trust between Management Accounting, executives and line managers impacts opportunistic behaviour

H[5I] = The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.

H[6I] = The level of trust between Management Accounting, executives and line managers impacts access to resources.*

H[7I] = Access to resources impacts efficiency and effectiveness in organisations.*

The impact of trust on efficiency and effectiveness in an organisation is very difficult to measure as overlaps exist as well as many other variables being present.

*As for research hypothesis [6I] and [7I], these research hypothesis will not be applied in the research methods and questionnaire section and so are not to be tested in the two organisations for reasons of confidentiality.

3.4.2.2 Social Network Formation in Organisations

The impact on performance of trust depends on the social impact trusted and untrusted individuals have within organisations. Thus it is important to shed light on these relations to differ between the weighted trust impact of individuals and the overall trust levels in an organisation.

Social Network analysis is seen to be conducive to understanding the activities of relational structures (Scott 2009, Carrington et al 2005, Cross and Parker 2004). The degree of embeddedness in the social network has strong impact on the social capital or resources such as finance and labour available for an individual (Scott 2009, Chua et al 2009, Cross and Parker 2004).

> "The relational dimension is characterised through trust in others and their cooperation, and the identification that an individual has within a network, focusing on the connection between individuals. Relationships can have a great effect on how knowledge is transferred." (Gao et al 2012, page 4)

Social networks analysis impacts organisational performance (Cross and Parker 2004) and improves information sharing (Hancock and Raeside 2010).

Gao argues similarly in 2006 that concepts of social auditing might produce increased trust levels in organisations. He found that his research revealed that:

> "Social auditing through engaging stakeholders via dialogue could be applied to build trusts, identify commitment and promote co-operation amongst stakeholders and corporations." (Gao and Zhang 2006, page 722)

Similarly, Bardy states "It would be desirable that trust research could be supplemented by research concerning the common experiences and practices of accountants who operate in business networks." (Bardy 2006, page 161).

Hence, the social network within and between different communities such as management accountants, line managers and senior management (executives) is explored to identify the different impacts of individuals on organisations based on a questionnaire approach.

The social network analysis is explorative and could explain different attitudes towards modelled trust dimensions, propensity to trust and affect- or cognition based trust models already described. Chua et al took a similar approach when they researched the impact of culture in social network formations (Chua et al 2009).

It could be used to analyse the perception of trust of individuals in an organisation in light of their immediate or extended network. Strength of network has an impact on the perception of trust in Management Accounting, Line Management or the executives.

However, the application of social network analysis is viewed critically by some authors not to be a "plug and play tool and has to be applied very carefully, potential misuse of data must be excluded and data has to be kept secure especially for sensitive environments" (Thiel 2010, page 5).

3.5 Model Summary

Based on the previous findings several modells were recognised to be crucial and applied to several facets of the management accounting vs. business partner trust relationships. These models were integrated into a primary modell.

Following the different models one part of the model is that individuals with high propensity to trust but without major influence in a network have a lesser impact on the overall trust levels in an organisation, while other individuals with lower propensity to trust but with major influence in a network would have a more negative impact on the overall organisational trust level as they might push more for formal control mechanisms.

Hence, organisations with low trust levels and many inter-organisational tensions should be filled more with low trustors in key nodes of the entire network. With these companies, if proper formal control systems are not in place, they should perform poorer economically than other companies in exactly the same environment and circumstances.

A second part of the model contains particular explorative elements inte context of the relations between status of an individual in a network and the respective preference of trust dimension and cognitive- and affect- based forms of trust.

Additionally, the weighted importance of trust dimensions from three different perspectives: Management Accounting, Line Management and Senior Management reveals institutionalised differences of the weighted trust dimensions in different business settings and from different personal views. The multidimensional model sheds light on the different dimensions and frame conditions.

The comparison between different organisations partially reveals the impact of different organisational forms on trust levels and the perception of its importance within an organisation.

Furthermore, the personal trust model (model of trust dimensions) and the organisational trust model can be compared. If, for example, employees in an organisation trust each other but perceive that the organisation has low trust levels, one can assume that formal rules, and internal-organisational tension are very high.

The integrated grant trust model comprises all models suggested in this research. It provides a simplified overview of the impact of trust on the performance of organisations. It construes that personal trust, the formation of social networks and organisational structures effect the organisational trust levels.

Organisational trust then is assumed to lead to higher or lower organisational effectiveness and efficiency. In this research it is referred to as performance.

Integrated grant trust model

Personal Trust
Grant trust model

Forecasting of future

1 2 3

Rational economical assessment of future be in a certain way

Relation of Trust

Intuition (gut feeling / psychological) based assessment of future to be in a certain way

Trustors judgement of weighting of Trust dimensions crucial for predictability and fullfillment of trustee

Trust Dimension	Weighting	Degree of fullfillment by trustee
Benevolence of trustee	X%	quantified / qualified
Intention of trustee	X%	quantified / qualified
familiarity of trustee	X%	quantified / qualified
Total	**100%**	**quantified / qualified**

4

Relation of reliance (– no trust relationship needed)

Relation of reliance / dependence

Intuition (gut feeling / psychological) based assessment of future to be in a certain way

Reliance Dimension	Weighting	Degree of fullfillment by trustee
reliability of trustee	X%	quantified / qualified
History of trustee	X%	quantified / qualified
intentions of trustee	X%	quantified / qualified
behaviour of trustee	X%	quantified / qualified
Other factos of trustee	X%	quantified / qualified
Total	**100%**	**quantified / qualified**

Real Control of situation or relation through power and complete knowledge

Result is a relationship of:
A. Trust
B. Distrust
C. Mixture of Trust and Distrust
D. Reliance
E. Mixture of C. and D.
F. Real Control through power

Impact of trust model

Organisational Trust
Organisational Tension model

Organisational Tensions
A. Bad Reputation
B. Assymetric Information
C. Conflict of Interest
D. Formal structure conflict
E. Corporate culture

SNF and Propensity to trust model

Impact Social Network formation
A. Internal Power
B. Propensity to trust

5

Organisational Trust levels

Transaction costs

Control

Access to Resources

Performance in a commercial business organisation

Figure 3.4 Integrated grant trust model

The trust dimensions shown here are not complete, also other aspects are not completely shown here due to constraints of the size of the model. Other aspects can be found in the literature review under Trust Dimensions.

The main models are illustrated in Figure 3.4 but can be summarised and simplified as the following four main stages for the trust model in Figure 3.5.

Integrated Master Model

Personal trust
Grant trust model

↓

Organisational trust
Organisational tension model

↓

Formation of Network
Social Network and propensity to trust model

↓

Performance in commercial business organisation
Impact of trust model
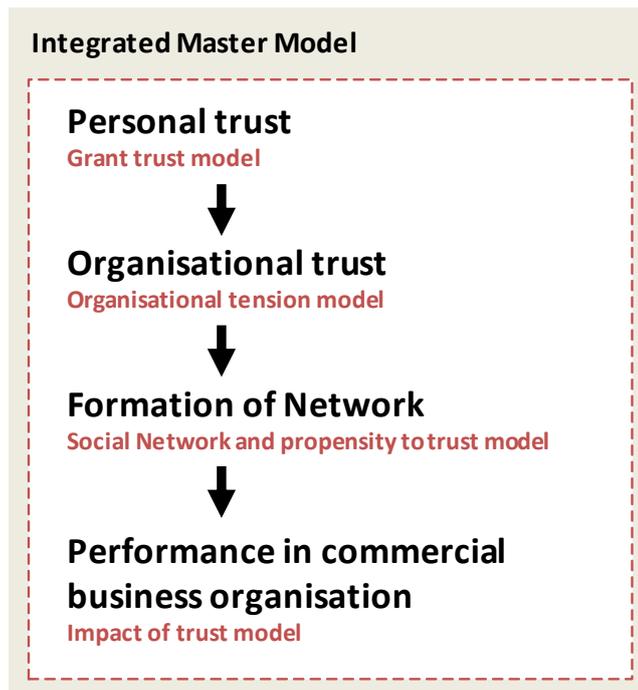
Figure 3.5 Simplified integrated master model

Based on these four simplified models in Figure 3.5 and the more detailed outline in Figure 3.4 the research questions will be as follows:

No.	Research Question	Model
1	Verify impact of low and high trustors	Propensity to trust / Social network formation
2	Explore the weighting of trust dimensions in Management Accounting relations with business partners	Grant trust model
3	Explore differences in cognitive and affective based trust in Management Accounting	Grant trust model
4	Explore impact of trust between Management Accounting and Line Management on the reduction of transaction costs, opportunism and access to resources	Conceptionlised impact of trust model
5	Explore impact of organisational tensions on trust levels in Management Accounting and Line Management interactions	Tension model / Grant trust model

3.5.1 Reductionism of models

Considering the complex relations in personal trust relations or even more complex internal-organisational relations the question naturally arises whether these relations can be reasonably modelled (measured and weighted) at all. Models of such complex relations may be over simplified resulting in reductionism and are often only partial valid.

However, in the past many researchers have built models of personal and intra-organisational trust relations based on quantitative, qualitative and mixed methods (Chua et al 2009, Bardy 2006). Therefore, this leads to many choices for the design of this research. It is deemed appropriate to continue with a similar approach even though a possible falsification of model parts, entire models and hypothesis cannot be completely avoided.

3.6 Model Conclusion

The models created and identified further address the aims of this research. The conceptionalised impact of trust model attempts to theorise the influence of trust levels on performance and the ways how this is accomplished. The tension model shows the impact of tensions on trust and the impact of trust on tensions. The grant trust model stands for an interdisciplinary most comprehensive trust measure taking in account all trust dimensions identified and concepts of game theory, psychology and economics. Additionally, it also includes elements of social network formation. This model solves the initial problem of not having a standardised trust definition in the beginning of this research.

The construction and identification of the models laid the framework for the analysis in the following chapters.

3.7 Research Hypothesis to be investigated

Based on the developed conceptual models of tension, impact, social network and propensity to trust, various research hypotheses are examined to understand the relationships between and within the different models.

A summary table is present below in Table 3.1, in the next Chapter 4 it will be described how these hypotheses were examined, followed by the investigation of these hypotheses in two organisations in Chapter 5 and 6. The findings are summarised in Chapter 7 where results are presented. The results of each study is presented in more detail in Chapter 5 and 6 respectively.

In this thesis the general hypotheses are made that if tensions are reduced trust becomes more likely and high trust generally tends to positively impact on business performance, sustainability as well as the forming of successful business relationships. It is also generally hypothesised that well connected social networks are associated with higher levels of trust and individuals who have high propensity to trust are more likely to contribute more positively to organisations. These general hypotheses are now tabulated in groups of specific hypotheses. Table 3.1 shows the models and research hypotheses, which are going to be tested.

Table 3.1 Summary of tested Research Hypotheses

Models / Research Hypotheses	
Tension Model	
H[1T]	*Internal conflict of interest leads to tensions between Line Management, Management Accountants and Executives**
H[2T]	*Organisational culture differences leads to tensions between Line Management, Management Accountants and Executives**
H[3T]	*Lack of personal trust between individuals leads to tensions between Line Management, Management Accountants and Executives*.*

H[4T]	*The level of trust between Management Accounting, Executives* and Line Managers impacts opportunistic behaviour*
H[5T]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations*
Impact of trust model	
H[1I]	*The level of trust between Management Accounting, Executives* and Line Managers impacts transaction costs*
H[2I]	*The level of transaction costs impacts the efficiency and effectiveness in organisations*
H[3I]	*The level of trust directly influences the performance within an organization*
H[4I]	*The level of trust between Management Accounting, Executives* and Line Managers impacts opportunistic behaviour*
H[5I]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.*
Social Network Model	
H[1SNA]	*Social Network has an impact on trust*
H[2SNA]	*Social Network has an impact on perception of performance*
Propensity to Trust model	
H[1P]	*High Trusters (measured as those willing to share information) contribute positively to trust levels in organisations*
H[2P]	*Low Trusters (measured by those wishing to have formal control) contribute negatively to trust levels in organisations*

In addition to the research hypotheses, which were tested, several explorative elements were investigated. These were the game theory strategies that

executives*, management accountants and line managers chose in relation to trust and the differences between the groups of the investigated factors.

*In the Furtwangen study executives were not tested only in Zimmer executives were part of the study.

Chapter 4

4   Research Methodology

The lack of a unified and standardised trust definition across all schools of thought leads to a general lack and fragmentation of understanding of the trust and Management Accounting phenomena. Due to the scarce existing literature this research naturally involves some explorative elements.

Yin pointed out: "when the boundaries between the phenomenon and context are not clearly evident" (Yin 1984 from Fazenda 2008 page 12) traditional research approaches might not always be the best. Yin's epistemological considerations led partially to the assumption that traditional research approaches might be less fruitful and promising in this research where explorative aspects are investigated.

A fresh perspective will be helpful at the beginning of theory building while in later stages when more knowledge is available the traditional normal science approach will be more appropriate (Eisenhardt 1989). Hence, a more positivist rationale appears to be the most reasonable approach to generally discover and understand the necessary and needed conditions for concepts of trust in Management Accounting vs. business partner relations. This helps to build simplified models and gain an overall perspective.

The positivist rationale is needed to build theory where insufficient theory has been developed so far. This rationale allows the measuring of trust and the adoption of a case investigation approach through a set of different techniques to create a new theory (Eisenhardt 1989).

> Eisenhardt (1989, page 546) further states: "Although, a myth surrounding theory building from case studies is that the process is limited by investigators' preconceptions, in fact just the opposite is true. This constan juxtaposition of conflicting realities tends to "unfreeze"

thinking, and so the process has the potential to generate theory with less researcher bias than theory built from incremental studies, or armchair, axiomatic deductions."

However, Eisenhardt (page 547) also pointed out that building theory from case studies can also have disadvantages in particular the "narrow and idiosyncratic theories" and that generalisation of findings might not be valid and reliable in social science. In order to prevent that two completely different organisation types - one public and one private - were chosen. Another reason why the case investigation approach has been chosen is in order to reduce the amount of data to be processed.

Hence, this research is based on both deductive and inductive approaches. Findings based on literature research are modelled deductively and later put in contrast with the findings from the investigative studies which use a bottom up approach (inductive). This might confirm or deny existing theory (Stam 2009).

In order to reach the goals of this research, mixed research methods were chosen. The strong positivistic approach to surveying employees in both types of organisations is also complemented by a qualitative approach to investigate by the use of interviews aspects (Bryman and Bell 2011), which did not get explained well in the quantitative section. Further description of how interviews are conducted is available in the Research Methods.

"Bryman (1989) and Easterby-Smith et al (1991) debate that the choice of a particular research methodology is influenced by several factors. These factors consist of the type of the research questions (such as "what," "how," "who," "why,"), each of which requires different research designs to adequately answer them (Yin 1994); the nature of the phenomenon under study, (Eisenhardt 1989); the extent of control required over behavioural events in the research context (Yin 1994); and the researcher's own philosophical stance. The last factor refers to how the researcher understands the nature of social reality and how

knowledge of that reality can be gained; this is discussed further by Blaikie (1993) and Tsoukas (1989)" (Al Khayat 2009, pages 56).

The epistimology follows that suitable for a mixed methods approach whose main focus leans on that of positivism (Bryman and Bell 2011). The rationality for this is supported by the methodology advanced by Al-Khayat (2009). She pointed out that:

"Research methods are usually approached and analysed at different levels starting with the basic level which covers the philosophy adopted for the research (Clarke 1998). According to Polit et al (2001) the methodological differences most frequently cited lie in the distinctions between the philosophical traditions of positivism which are associated with the quantitative research and the post positivist philosophy represented by the qualitative research approach.

The basis for research paradigms chosen are methodology, epistemology and ontology (Neuman 2003, Guba and Lincoln 1994)" (Al Khayat 2009, pages 57-60).

Ontology, Telelogy and Epistomolgy are defined according to Tolk and Neumann as the following:

"Ontology has been understood as the 'study of being' or 'the study of what exists' and is often captured as a system defined by finite set of concepts and their relations" (Tolk 2013, page 19).

"Ontology, according to Neuman, deals with what exists and the nature of the world while epistemology is a theory of knowing and how we acquire knowledge of the external reality." (Al Khayat 2009, pages 57-60).

"Epistemology was described the 'study of how we come to know' including how we define knowledge, represent it, and communicate it with others" (Tolk 2013, page 19).

"Teleology focuses on the application being the 'study of action and purpose' resulting in methods" (Tolk 2013, page 19).

Most authors agree that: "for some research goals, quantitative methods are more appropriate than qualitative techniques, and qualitative methods are more appropriate than quantitative methods for other research questions" (Goertz and Mahoney 2012, page 3). The question of what technique was suitable for what research question was also reflected upon this research. However, the terms quantitative and qualitative are difficult to be defined and partially overlap (Goertz and Mahoney 2012). In this research, a mixed method approach is proposed using elements from both methods but with an emphasis on quantiative methods.

The following section shows the discussion of what is appropriate for this research and considerations were made based on literature findings:

"Mingers and Gill (1997) summarise the two acceptable epistemologies that are valid when conducting research, namely positive, and interpretive as follows:

1. Hard (positivist) which treats the organisational world as objective and the same as the natural world;
2. Soft (interpretivist) which treats human organisations as fundamentally different, based on subjective meaning and interpretation.

The positivist school of thought assumes that things can be studied as hard facts and the relationship between these facts can be established as scientific laws. The basic reasoning of positivism assumes that an

objective reality exists which is independent of human behaviour and is therefore not a creation of the human mind (Crossan 2003).

According to Martin and Richards (1994) nature is assumed to hold a unique truth and the current position of scientific knowledge is believed to be the best available estimate of that truth. There is no need to examine why scientists believe what they believe, because there are assumed to be no social factors intervening between nature and the scientific truth. Those who contradict these revelations of nature are treated differently and it is assumed that there must be some social explanation for their particular behaviour.

Researchers following the positivism paradigm approach the problem solving of the issue at hand by formulating research hypotheses that are subjected to empirical testing through quantitative methods (Buttery, 1991). Such methods help establish an objective, value free and clear interpretation of the reality (see Guba and Lincoln, 1994 for discussion).

The interpretivist approach stands on the other extreme view of approaches to the problem at hand as it is subjective and interpretivists "contend that only through the subjective interpretation and intervention in reality can that reality be fully understood" (Davidson 1980). Interpretivists believe that reality is not objectively determined, but is socially constructed. The fundamental assumption is that by the right placement of people in their social contexts, there is greater opportunity to understand the perceptions they have of their own activities (Hussey and Hussey, 1997). By its nature, interpretivism promotes the value of qualitative data in pursuit of knowledge. In essence, this research paradigm is concerned with the individuality of a particular problem or situation which contributes to the underlying the pursuit of contextual depth (see Myers, 2002). Hussey and Hussey (1997) summarised the main differences between the positive and the interpretivits paradigms. They point out that interpretivist approaches usually have small sample

sizes, have high involvement of the researcher and are very subjective when compared to the positivist approach" (Al Khayat 2009, pages 57-60).

"The positivist paradigm is often seen as the scientific approach to research. It forms the foundation for the natural sciences and for experimental research and quantitative studies in the social sciences. Within positivism, there is an emphasis on objective measurement of social issues, where it is assumed that reality consists of facts and that researchers can observe and measure reality in an objective way with no influence of the researcher on the process of data collection" (Hennik et al 2011, page 7).

This is suitable for the research to be conducted as this approach appears to distort the research results less compared to more interpretive approaches where an author bias could happen. The philosophical reflections on this research, led mainly to a positivistic approach, with elements from interpretive approaches.

"Positivsm adopts the epistemological approach, whereby researchers formulated a hypothesis from theoretical concepts or statistical models, then operationalize and test the hypothesis by collecting empirical data and then evaluating whether the evidence supports the hypothesis. This experimental approach is often views as the core process for social science research" (Hennik et al 2011, page 7).

The models created in the previous chapter can be tested according Hennik et al by using a positivistic approach. However, Hennik also states that:

"Positivism is often critized for its assumptions about objective measurement which essentially separates the researcher from the researched and fails to acknowledge the interactive and co-constructive nature of data collection with human beings.

Interpretive paradigm emerged largely in response to these drawbacks of positivism" (Hennik et al 2011, page 8).

The problems about interaction and interdependencies is also mentioned by Turk (2013) who addressed these in addition to new models discovered and which appear not to be able to coexist with existing models.

Therefore, where necessary this research also uses other more interpretive methods when the positivistic approach does not reveal sufficient results. The models suggested in this research are tested with a mixed research method, mainly quantitative but when results are not credible more research is conducted with interviews. This approach takes in account that models are a simplification of practice (Tolk 2013) and can be falsified, but are useful in explaining and illustrating findings in this research. Hennik et al state that: "The interpretive aspects means that the approach seeks to understand people's lived experience from the perspective of people themselves." (Hennik et al 2011, page 8). This is going to be done with the interview approach when the quantitative positivistic approach provided insufficient insight. There might be findings the quantitative questionnaire approach does not capture sufficiently such as "tacit knowledge" or "'Transparent Vision' Fallacy" (Tolk 2013 page 41), where participants cannot sufficiently verbalise or illustrate their perceptions of practice. A general example has been raised by Tolk who stated that "the ability to ride a bicycle is difficult to write down or verbalise. This can be regarded as non-conceptual mental content. Obviously this causes immediate problems for the idealist stance. It also raises issues for the realist stance" (Tolk 2013 page 41). Similarly, he stated that model builders are not always having a transparent vision.

"The underlying epistemology guiding this investigation into trust research falls broadly into the positivist and interpretivist paradigms (Clarke 2000).

This research in which trust levels may be influenced by a set of variables and, it is argued that this might result in higher organisational performance, is approached from a positivist perspective as it is consistent with the nature of the topic. Saunders et al (1997) argues that this approach is preferred because it makes for the economic collection of data; clear theoretical focus of research; control of the research by the researcher; and provides easily comparable data" (Al Khayat 2009, pages 59-60).

In addition, this research intends by answering a series of research questions to explore and build a Grant trust model. To do this the researcher considers that a survey based approach is more likely to produce answers to these questions than say a solely observational study. The issue of thoroughness provided by the positivist perspective is relevant for this research to ensure that the study generates findings which are sound, adequate, and able to be evaluated according to accepted standards (Al Khayat 2009).

"Therefore, this research falls within the positivistic paradigm rather than interpretivistic paradigm" (Al Khayat 2009, pages 60)

As the intention is to investigate how trust influences and might be influenced by variables such as tension and propensity to trust which the research proposes are in turn resulting in higher organisational peformance. The central research hypotheses will be constructed from a thorough investigation of the literature in the field. The research hypotheses will then be tested by using data collected from a questionnaire developed out of earlier published studies (Al Khayat 2009).

"Accordingly, a model will be constructed of how trust operates and results in organisational performance "along with a set of untested (unexamined) other factors. In this the researcher will attempt to remain detached from the problem realm and so avoids introducing personal biases. This follows the recommendation by Hussey and Hussey (1997).

The researcher also studied relationships in both case investigations as an observer (sometimes as a participant especially in Zimmer) of the situation but attempted to remain neutral throughout the research" (Al Khayat 2009, pages 57-60).

In this research the term case study has therefore not been adopted as these are investigative studies due to the very positivistic view.

Additionally, in this research mainly the perception of people is being analysed due to the nature of research methods chosen.

The social network analysis and corresponding research method is quantiative based and is described in the following sections within this chapter, in the previous literature chapter as well as the in the investigative study of Zimmer in more detail.

4.1 Research goals

The aims of the proposed research are to assess the role of trust in Management Accounting and to analyse these aspects in one study using the European Quality of Life survey in the appendice to gain understanding of trust characteristics of job role, gender, relgion, language, culture etc. and two different organisations - one commercial business organisation Zimmer GmbH and one public organisation University of Furtwangen in Chapter 5 and 6 to shed light on the impact of organisational differences on trust.

This chapter is about defining the research goals, discussing the methodology and research methods and laying out the path this research is going to be conducted. At first the research goals are presented, followed by an discussion to define the methodology in this research. Later on this is complimented with the research methods where a questionnaire approach is presented and the development shown based on critical reasoning from the literature review and the model section.

The specific research goals are:

1. **Find a multidimensional trust measure**

2. **Explore the weighting of trust dimensions in Management Accounting relations with business partners**
   2.1. Management Accountants
   2.2. Line Manager
   2.3. Senior Management

3. Test models

3.1. Explore the impact of trust between Management Accounting and Line Management on reduction of transaction costs, opportunism and access to resources

3.2. Explore the impact of trust between Management Accounting and Line Management in two different corporate environments, one commercial business organisations and one public company

    3.2.1. Verify impact of low and high trustors

    3.2.2. Explore differences in cognitive- and affective- based trust in Management Accounting

    3.2.3. Explore the impact of organisational tensions and the formation of networks on trust levels and performance

4.2   Research Methods

This chapter defines the methods used in this research. Based on the previous findings, assumptions and parameters defined in the initial literature research and the models, assumptions and research hypotheses will be tested for their practicality. This will be achieved mainly through a study from the European Quality of Life Survey to accommodate for lack in literature in relation to trust and socio economic charateristics and through studies with two selected international organisations in South Germany and Switzerland of which one is a commercial business organisation and the other a public organisation to test the selected research hypothesis and models' results over different corporate cultures. The rationale for the selection of two different organisations is to ascertain the results in two completely different environments. This positioning should be conducive to "build from the case study into a larger context in social science" (Eisenhardt 1989, page 533) and to prove generality of the theory.

In order to exclude the acknowledged different impact of the different national cultures the countries chosen are German speaking countries.

Looking at the current stage of trust research, many different research methods have been used in the past. Therefore, this research aims to use "integrative reviews to summarise past research by drawing overall conclusions from many separate studies that are believed to address related or identical hypotheses" (Cooper 1984, page 11)

> However, for example Tzafrir and Gur stated: "Collecting data from customers, employees as well as archive data will advance future research. It is suggested that multiple sources of data are needed in order to overcome self reporting and common method related biases in organisational research (Donaldson and Grant-Valone 2002). Additionally, it would be beneficial to use qualitative methods, especially in the investigation of trust, in order to clarify its complicated nature (Goudge and Gilson 2005)." (Tzafrir and Gur 2007, page 12).

Though qualitative research methods are often considered appropriate in social science to explore and discover phenomena and their relations (Yin 2009) this research also partially uses a quantitative approach. In the current stage of trust research - though fragmented - many qualitative sources are available, which can be modelled and empirically tested partially through further quantitative studies.

Therefore, considering the existing sources, it might add more value to use a partial quantitative approach to give a precise and testable expression to qualitative ideas. Hence, this research adopts a mixed method approach (Diekmann 2009).

> Saunders in 2010 pointed out that the appropriate research method has yet to be recognized. He stated as part of his research goals that: "recognizing the relative advantages of both quantitative and qualitative methods for addressing trust dynamics, and, where appropriate, exploring the utility of mixed-methods research designs." (Saunders et al 2010, page 593) Indicating that research designs have not sufficiently been tested in trust research yet.

Additionally, this trust and management accounting research touches fields which are very critical for people and organisations themselves.

In order to enable research in organisations a certain assurance of confidentiality needs to be given to employees, management and other stakeholders. In many cases only aggregated data or anonymised data can be published. If using purely qualitative methods, it would be difficult to prevent indirect identification of individuals or sub-departments when publishing the results.

Hence, in order to avoid making individuals identifiable a lot of author editing and disclosure control would be required in expressing the results.

Measures to preserve confidentiality may then result in changing or omitting critical passages and could potentially change the nature of the results.

Additionally, result aggregation would be very difficult and there is likely a high degree of bias or a selection error involved.

Baldvinsdottir et al made an analysis of articles presented in Accounting journals between 1997-2002 where the word trust was mentioned in the full text at least once. Their conclusion why there is little empirical research into trust is due to the fact that there are:

> "infrequent examinations of epistemological and ontological assumptions connected with trust. If done, a certain disharmony may be found between the assumptions that would - if solved, make empirical research more valid and easier to carry out." (Baldvinsdottir et al 2003, page 17).

However, as previously discussed in Chapter 2, Table 2.2a Baldvinsdottir findings might have some deficiencies and might be falsified.

Based on the existing sources and defined models where qualitative and quantitative methods were used, the research method used in this research follows a classical investigative study approach with application of a social network formation analysis. The investigative study approach has been used by trust researchers before (Velez et al 2008). The method chosen is qualitative but also incorporates elements of quantitative methods.

It attempts a triangulation of three different populations (line managers, management accountants and executives).

The individual questionnaire method is chosen to achieve standardised and transparent results with as few discrepancies as possible. According to Eisenhardt (1989, page 533) "the triangulation, within-case and cross-case analysis is a more nearly complete roadmap." Hence, it should enable a more accurate testing of the models and hypothesis. Eisenhardt (1989, page 548) further stated that "case studies have a high degree of validity due to their intimate linkage to the empirical evidence."

If the findings of the initial literature review are not reasonable in practice or existing sources are incomplete then further surveys and interviews are planned to be conducted.

4.2.1 Research plan

The thesis is structured as follows: Literature review provides an overview of the different types of trust in personal as well as intra-organisational relations. The operationalisation of trust mainly focuses on finding and developing a trust measure.

The section on model building discusses the models used and the research hypothesis developed through the literature research.

The methodology describes the research design and research methods adopted. It follows a classical investigative study approach where both qualitative and quantitative methods are applied. It also describes the development of a questionnaire method.

Field work / data collection and (statistical) analysis is focused on testing models and research hypotheses on two different organisations of which one is a commercial business organisation and the other a public state owned organisation.

The following figure shows the current approach for the proposed topic:
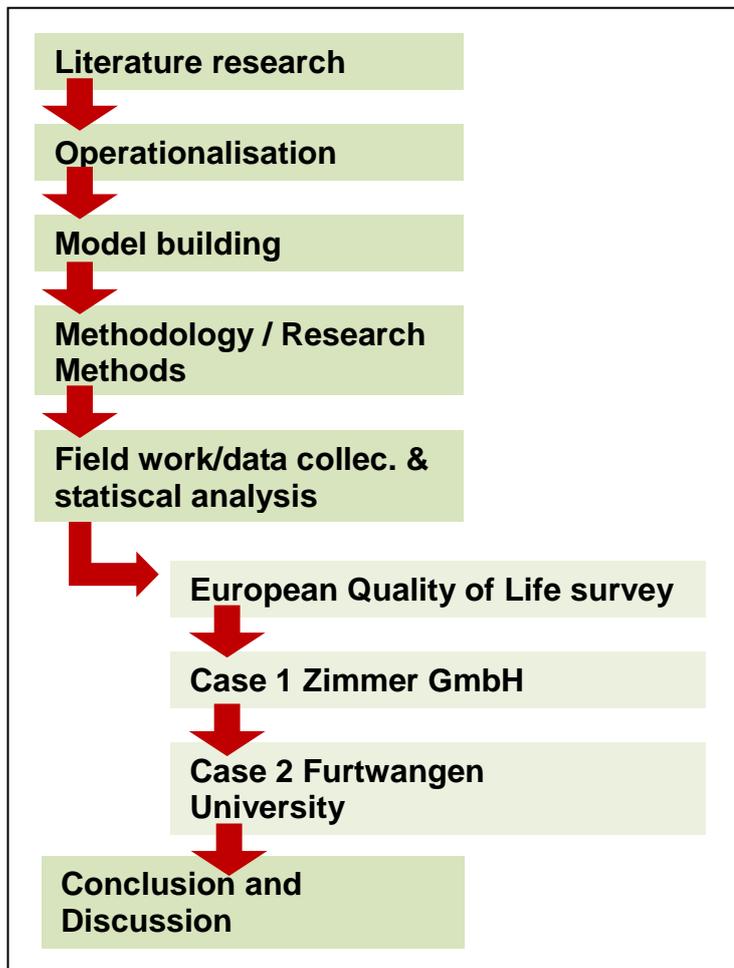
Figure 4.1 Process Flowchart

4.2.2 Analysis Method

Simple descriptive statistics will be used.

For questions within a common theme and correlated with each other, Principal Component Analysis and Factor Analysis will be used.

"Factor Analysis is a technique, or more accurately, sets of techniques for identifying the underlying hypothetical constructs to account for the relationship between variables. Principal Components Analysis is extremely similar, and is often used as a preliminary stage to Factor Analysis itself. Exploratory Factor

Analysis is used to identify the hypothetical constructs in a set of data, while Confirmatory Factor Analysis, as the name implies, is used to confirm the existence of these hypothetical constructs in a fresh set of data. Confirmatory Factor Analysis has strong similarities to Structural Equation Modelling." (Foster et al 2006 page 70)

Principal Component and Factor analysis is used to reduce the amount of questions or dimensions and capture the underlying construct as well as to identify whether the questions used really capture one dimension or several other dimensions (Foster et al 2006).

To show the variables on trust and the impact of trust on performance, Structural Equation Models and in particular their expression as Path Models will be used.

"Path analysis makes use of multiple regression analysis to look at the relationship between variables. The primary difference between the techniques is that path analysis graphically and expicitily looks at causal factors. The relationships between variables are designated by path coefficients (the standard regression coefficients from multiple regression) and show the effect of the independent on the dependent variables and also any relationships between independent variables." (Foster et al 2006, page 89)

"Structural equation modelling is a confirmatory, multivariate technique that looks at causal relationships between variables in a diagrammatic form. An advancement of Path Analysis, Structural equation modelling is a process of model development that looks at the relationships between observed and latent variables where the goal is to select a model that best accounts for the data. Structural equation modelling is almost exclusively a computerised process and is used extensively in the social sciences, economics, population genetics, marketing, ecology and other fields where the analysis of complex data sets can be used to make educated guesses about behaviour – human, market or otherwise." (Foster et al 2006 page 103)

This technique investigates the causal relationships and supports to test and select models which fit the best. It helps to "examine complex relationships efficiently" where "multiple regression analysis" would be more cumbersome (Foster et al 2006, page 90).

To analyse the social network the UCINET Vol. 6.0 software is used to obtain a measure of centrality. Netdraw is then used to plot sociograms. There further information can be found in the Social network method section later in this chapter.

4.3 Questionnaire Development

Firstly the operationalisation of a measurement of trust is established followed by the development of questions to measure specific trust dimensions. This was seen as a main goal in this research to find a most comprehensive trust measure taking into account elements from game theory, psychology and economics.

In order to ascertain the impact of trust in organisations further; factors, in particular the main drivers "control and transaction costs" are made measurable. Elements of social network analysis are also operationalised for inclusion in the questionnaire. Similarly, three performance measures are adopted from existing literature and integrated into the questionnaire.

4.3.1 Operationalising the Measurement of Trust

The trust scale developed in the literature review is used for the making means of measuring trust.

Tzafrir and Gur (2007), by developing the work of Cummings and Brommiley (1996), tried to form a multidimensional trust measure. Tzafrir and Gur did not adopt all trust dimensions mentioned in the literature review. However, having already successfully tested their questionnaire and for this research needed limitations of the future questionnaire to prevent making the questionnaire too long it appeared reasonable to adopt their questionnaire.

The following instructions prefaced the scale used to measure trust by Tzafir and Gur.

"Think about specific core manager(s) in your organisation. For each statement, write the number that best describes how much you agree or disagree with each statement, where (1) is strong disagreement and (5) is strong agreement" (Tzafrir and Gur 2007, page 1-20).

Table 4.1 Tzafrir and Dolan's Trust Scale

Tzafrir and Dolan's Trust Scale (2004)	
1.	Employees' needs and desires are very important to managers.
2.	I can count on my managers to help me if I have difficulties with my job.
3.	Managers would not knowingly do anything to hurt the organisation.
4.	My managers are open and up front with me.
5.	I think that the people in the organisation succeed by stepping on other people.
6.	Managers will keep the promises they make.
7.	Managers really look out for what is important to the employees.

8.	Managers have a lot of knowledge about the work that needs to be done.
9.	Managers are known to be successful at the things they attempt to accomplish.
10.	If I make a mistake my managers are willing to 'forgive and forget.'
11.	Managers' actions and behaviours are not consistent.
12.	Managers take actions that are consistent with their words.
13.	It is best not to share information with my managers.
14.	There is a lot of warmth in the relationships between the managers and workers in this organisation.
15.	Managers would make personal sacrifices for our group.
16.	Managers express their true feelings about important issues.

(Tzafrir and Gur 2007, page 1-20).

The answers, measured on a Lickert scale, were then summed to give a measure of trust dimensions and overall trust levels. The questions in Table 5.1 are adopted with adjustment for this research for use amongst Management Accounting, Senior Management and Line Management relationship environment in private business and public organisations. The questions devised for use on line managers are displayed in Table 5.2 for private business organisations, from this the questionnaire for public organisations is subsequently developed, (this appears in Table 8.1).

Table 4.2 Trust dimensions – questionnaire for line managers

	Trust Scale	Trust Dimension
1	My needs and desires in my job are very important to Management Accountants.	concerned
2	I can count on the Management Accountants to help me if I have difficulties with my job or decision making.	reliability

3	Management Accountants are open and up front with me.	honest / open / vulnerability
4	Management Accountants really look out for what is important to their Line Managers.	benevolence / concerned
5	Management Accountants have a lot of knowledge about the work that needs to be done.	competence
6	Management Accountants are known to be successful at the things they attempt to accomplish.	competence / reliability
7	If I make a mistake the Management Accountants are willing to 'forgive and forget.'	benevolence
8	It is best not to share information with the Management Accountants.	vulnerability

4.3.1.1 Overall Trust Question

Following the recommendations of most authors that trust is often misunderstood by questionnaire participants, the use of the word "trust" has been avoided. However, this research aimed to use at least one single overall trust question to confirm these findings. The following question has been applied before in Japan by Tanioka et al in 2002-2003 and in the European Quality Of Life Survey (2003). This trust question in this research also aims at looking at the success of the relationships within the organisations and this is derived from Velez et al (2008) when they proved that trust increases collaboration between employees.

Table 4.3 Overall trust question

1	Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	Overall Trust question / Success of business relations

4.3.1.2 Measuring Influence of Trust

The questions developed for this research attempt to define the perception of different stakeholders (management accountants, line managers and senior managers) and of the role trust plays in the relevant organisation. This is in order to identify the impact of trust on the performance and test the research hypothesis. This is presented in Table 4.4.

Table 4.4 Trust impact on Performance for Line Managers

1	Good relation to Management Accountants provides more access to resources, information and / or funds for your department	Transaction cost: Social Capital
2	Management Accountants support us to make decisions	Transaction cost: Decision making
3	Good relations between Line Managers and Management Accountants help to control your business	Trust and Control
4	Management Accountants enable you with good information to suggest (or make) changes.	Trust and Control: Empowerment

Similar questions were used for management accountants and senior managers

4.3.2 Organisational Tensions

Questions were also formed to allow for measurement of organisational tensions and these for line managers are displayed in the following Table 4.5.

Table 4.5 Organisational Tensions Line Manager perspective

	Organisational tension scale	Forms of trust	Research Hypothesis
1	Organisational tensions between Management Accountants and Line Managers are strong.	Institution based / Process-based	H[1T]
2	Management Accountants are too close to Senior Management.	Institution based / Process-based	H[1T]
3	Management Accountants lack of business understanding.	Institution based / Process-based	H[1T]
4	It is difficult filling this questionnaire because I am afraid of the consequences.	Institution based / Process-based	H[2T]
5	I would go on a sporting or social outing privately with Management Accountant(s) in my free time	Characteristic-based	H[3T]
6	I would rely on Management Accountant if they would be willing to calculate the costs for a private investment for example building of my house.	Process-based	H[3T]
7	Management Accountants in general have a negative reputation.	Institution based	H[2T]
8	It is more difficult to work with people with different backgrounds (such as different nationality, religion, political views, etc.)	Characteristic-based	H[2T]

Similar questions were developed for management accountants and senior managers.

4.3.3 Affective based vs. Cognition based trust

McAllister (1995) suggested that trust is granted on affective-based and / or cognition-based approaches. He claimed that cognition-based trust refers to a rationally cognitive evaluation while affective-based trust to emotions, behaviour of the trustee and the frequency of interactions. His work was recently developed by Tsai and Chuang (2010) who analysed his concepts in context of interactions between the health-care system and patients.

Tsai & Chuang tested four hypothesis:

> [H] 1 Affective based trust will positively affect patients' satisfaction
> [H] 2 Cognition based trust will positively affect patients' satisfaction
> [H] 3 Insitution-based trust will positively affect patients' satisfaction
> [H] 4 Communication will positively affect patients' satisfaction

Their research method included a seven point Lickert scale questionnaire. Their sample population included 4 hospitals in Taiwan with 660 surveys distributed and a response rate of 87.3%. The findings gave support for all hypotheses and that affective-based trust showed the highest influence on patients' satisfaction followed by cognition based trust.

Questions used to reveal views of affective and cognition based trust for line managers are presented below and similar questions were used for management accountants and senior managers.

Table 4.6 Affective / Cognitive Trust Line Manager perspective

1	Management Accountants greet you warmly, being friendly, never crabby or rude	Affective based trust
2	Management Accountants are encouraging you and checking on your progress	Affective based trust
3	Management Accountants are demonstrating competency to diagnose and manage your problems	Cognition based trust
4	Referring to a specialist when needed; readily admitting if he/she doesn't know something	Cognition based trust

4.3.4 Propensity to trust

4.3.4.1 High and Low Trustors

It has also been identified that social complexities within an organisation can be reduced and better controlled either by adopting a formal power structure or by increasing the level of trust thus making them more efficient and effective (Luhman 2000, Krause 2004).

A mixed approach is often proposed in literature with different weighting depending on the task and the set up of the relevant organisations. Other authors disagree that trust can replace control and argue that increased vulnerability is risky if not dangerous for an organisation (Morris and Moberg 1994) and others suggest that control and trust are not subsitutes but are both contributing to the level of cooperation needed in a relationship (Das and Teng 1998).

Hence, it is important to understand the individuals preference towards trusting or generating controlling systems.

No previous questionnaire has been found during the conduct of this research. Hence, the questions might be misinterpreted in some cases.

The participant has to be defined as a low or high trustor. Based on the Trust Dimension questionnaire this is difficult to determine as there might be other factors involved. Thus it might be more appropriate to ask more specifically for the general propensity and the share of control and trust involved. The questions used to measure whether or not respondents are high or low trusters are presented in Table 4.7.

Table 4.7 Identification of High and low trusters

1	Strict control is better than being dependent informally on others in the company for the success of the business.	Control vs. Trust / Dependence High vs. low trustor
2	Clear descriptions and written documents (including emails) are better for the success of the business than more informal ways of communication	Control vs. Trust / Dependence High vs. low trustor
3	My colleagues in general share important <u>personal</u> information with me	Trustworthiness
4	My colleagues in general share important <u>company</u> information with me	Trustworthiness
5	Bringing control to a company can be achieved by hiring competent and reliable people	Control vs. Trust / Dependence High vs. low trustor
6	To bring control to a company independent people are important	Control vs. Trust / Dependence High vs. low trustor
7	Given the market conditions would you consider your company to be successful?	Success of organization

4.3.5 Social norms

Following the notions of Hardin (2002), Cook et al (2001), Nooteboom et al (2003), Wuketits (2002) presented in the literature research under section social norms, elements of game theory are presented.

Here the most common strategies used in game theory are becoming part of a questionnaire to understand what strategies are relating to what level of trust and other characteristics.

Therefore, to understand and explore strategies towards game play and correlations to other variables the following questions were compiled.

Table 4.8 Basic Strategies in game theory

1	I think that things done for others should be rewarded quickly.	Tit for Tat – lower trust in network
2	I think that things done for others should finally be compensated one day.	Keep the books balanced – medium trust
3	I think that somebody who has helped others should not necessarily be compensated.	Commitment – high trust

The measure presented here might vary by demographics so it deemed important to control for those. To investigate this further an analysis of the German speaking world in the appendices – The European Quality of Life survey is provided.

The European Quality of Life Survey

"The *European Quality of Life Survey* (EQLS) is a representative, questionnaire-based household survey series." (Economic and Social Data Service 2012).

"The European Quality of Life Survey is carried out every four years. The European Quality of Life Survey (EQLS) examines a range of issues, such as employment, income, education, housing, family, health, work-life balance, life satisfaction and perceived quality of society. It was one of the first steps in a major initiative to monitor and report on living conditions and quality of life in Europe.

The survey was carried out for the first time in 2003, covering 28 countries (25 Member States and three candidate countries). The second iteration took place in 2007" (EUROFOUND 2010).

The study was funded by the European Union and the sample covered 25 European Union countries, plus Bulgaria, Romania and Turkey, in 2003. There were 1,008 individual responses in Austria and 1,052 in Germany.

An ordinary least squares regression model of trust was obtained using as independent variables gender, single parent, health (fair/poor/bad), education ISCED 4 or higher, public sector employee, if in social housing and if live in Austria or Germany. The coefficients of the model are presented in Table 4.9.

Table 4.9 Table of regression coefficients of Trust

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	P-value
		B	Std. Error	Beta		
1	(Constant)	5.971	.096		62.290	.000
	Gender	-.147	.107	-.012	-1.370	.171
	Marital status	-.377	.249	-.013	-1.513	.130

Education	.412	.113	.032	3.661	.000
Housing	-.535	.178	-.027	-3.005	.003
Health	-.699	.126	-.048	-5.540	.000
Living in Austria and Germany	-.672	.125	-.047	-5.392	.000

a. Dependent Variable: Q23 Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please use a scale from 1 to 10, where [1] means that 'you can't be too careful' and [10] means that 'most people can be trust

This model did not explain well the variation in trust across the EU15 countries having an adjusted R^2 value of only 8%. However, it did confirm that living in social housing, not being in good health and living in Austria or Germany were all significantly associated with lower levels of general trust. Additionally, it was confirmed that the higher the level of academic qualifications the higher the levels of trust.

The full details of the investigation appears in the appendices.

4.3.6 Social network formation

Social networks are part of personal trust and organisational trust. The formation of networks and the strength of ties to other employees and managers has an impact on trust and performance of employees. The more embedded an employee is in the organisation one can hypothesise the more contacts they have and the more information and trust they receive. Hence, there is a need to form questions to find out about the respondents position in their work based social network.

Social network analysis research has developed a quantitative methodology to analyse relational activities in networks (Scott 2009, Freeman 2004, Carrington et al 2005, Cross and Parker 2004). In management accounting and trust research social network analysis has been applied in several areas (Worrell et al 2011, Masquefa 2008, Richardson 2009, Gao and Zhang 2006).

Several Measures are available to be applied in Social Network Analysis. The ones mainly used in this research are now outlined:

Betweenness-centrality

This measure how central someone is between other actors - it can be thought of a the bridge between groups. Someone who has high betweenness centrality is an important person as they govern the flow of information between groups. Thus one can speculate that only trusted individuals will have high betweenness centrality. Formally Borgatti defines betweenness-centrality as:

"Let b_{ijk} be the proportion of all geodesics linking vertex j and vertex k which pass through vertex i. The betweenness of vertex i is the sum of all b_{jk} where i, j and k are distinct. The normalized betweenness centrality is the betweenness divided by the maximum possible betweenness expressed as a percentage. For a given network with vertices $v_1....v_n$ and maximum betweenness centrality c_{max}, the network betweenness

centralization measure is $S(c_{max} - c(vi))$ divided by the maximum value possible, where $c(vi)$ is the betweenness centrality of vertex vi" (Borgatti et al 2002 UCINET - download).

DEGREE-Centrality

This measure, developed by Freeman (1979) reflects an egos' position in the network and measures the number of connections that the ego has. This measure can be decomposed into two parts ***in-degree-centrality*** which is the number of links directed to that ego. Often this is in the form of questions to a technical superior or the flow of information to a senior post. Thus high in-degree centrality is sometimes considered to be a measure of power. As with betweenness one can conjecture that egos with high degree or in-degree centrality receive many nominations and that this might well be associated with high trust. The other sub division of degree centrality is ***out-degree-centrality*** which is the number of nominations (links emanating from the ego this is often a feature of junior people seeking information and an actor by allowing the connection would reflect trust in the ego. Formally, Borgatti defines degree-centrality as:

"The number of vertices adjacent to a given vertex in a symmetric graph is the degree of that vertex. For non-symmetric data the in-degree of a vertex u is the number of ties received by u and the out-degree is the number of ties initiated by u. In addition if the data is valued then the degrees (in and out) will consist of the sums of the values of the ties. The normalized degree centrality is the degree divided by the maximum possible degree expressed as a percentage. The network degree centralization measure is $S(c_{max} - c(vi))$ divided by the maximum value possible, where $c(vi)$ is the degree centrality of vertex vi" (Borgatti et al 2002 UCINET - download). These concepts can be expanded upon and Borgatti (2005) discusses centrality further.

CLOSENESS

Closeness is simply how close in social relation terms rather than geographical terms an ego is to actors. Close actors are often similar or hemophilic they have things in common and trust one another. Thus it is suggested that high closeness is a reflection of high trust. The opposite of closeness is farness which represents how distant an ego is from their actors. Separation results as a consequence of differentness or otherness – the actors are strange and not to be trusted. Hence, high farness should map to low trust. Formally, Borgatti defines closeness as: "The farness of a vertex is the sum of the lengths of the geodesics to every other vertex. The reciprocal of farness is closeness centrality. The normalized closeness centrality of a vertex is the reciprocal of farness divided by the minimum possible farness expressed as a percentage. For a given network with vertices $v_1....v_n$ and maximum closeness centrality cmax, the network closeness centralizationmeasure is $S(c_{max} - c(vi))$ divided by the maximum value possible, where $c(vi)$ is the closeness centrality of vertex vi" (Borgatti et al 2002 UCINET - download).

POWER

Related to centrality is power which is a measure of an individual's influence in a network. A popular measure is the Bonacich Power Centrality which is a measure of the degree to which an actor's centrality (prestige) is equal to a function of the prestige of those they are connected to. Thus, actors who are tied to very central actors should have higher prestige / centrality than those who are not. This then leads to the hypothesis that high Bonacich power will be associated with high trust. For more information see Bonacich (1987).

Chua et al (2009) investigated relational aspects of trust and asked survey participants to describe the nature of contact. They used primarily the

dependence, friendship and social enjoyment factors for their research but captured the other two for control since these are more common in managerial interactions (Chua et al 2009, page 495):

- Economic dependence
- Friendship and social enjoyment (small talk)
- Information or advice for getting task done
- Information on career guidance and opportunities

Relationship duration is seen as another factor by Chua et al (2009). The longer the relation the higher the trust levels (Viklund 2002). This has been repeated several times and is also considered in the model to be researched.

- Relationship duration

All five types of interactions were included in the questionnaire to understand more about the type of relation between the three populations. As this research is partially also explorative it appeared reasonable to widen the scope.

Network size is seen to be necessary in research to be limited as network theories science says there exists an implicit relational capacity limit to maintain and foster trust relationships (Chua et al 2009, page 495). This assumes that employees have limited time to build relations and need to prioritise with whom they keep contact.

Therefore, Chua et al (2009) limited their contacts in their research procedure to 24. In this research the population of management accountants and line managers is not very big per study so a limit has been set. Questionnaire participants cannot name more than: 4 line managers, 4 management accountants and 2 executives.

4.3.6.1 The Social Network part of the Questionnaire

In this section a social network questionnaire taking into account the relationships between line managers, management accountants and executives is established in Table 4.10.

The network size asked for is limited to 10 contacts of each survey participant in total (of which are 4 line managers, 4 management Accountants and 2 executives).

Table 4.10 Questionnaire Social Network Analysis

Who are your most important <u>line managers</u> you are interacting with?

Please name maximum 4

Sirname	Name	Job title	How often do you contact them (by phone, mail or other ways) for private & business reasons?	How many years have you know them?	What is the main reason for contact?		
					friendship and social enjoyment	information or advice of getting a task done	information on career guidance and opportunities

Who are your most important <u>Management Accountants</u> you are interacting with?

Please name maximum 4

Sirname	Name	Job title	How often do you contact them (by phone, mail or other ways) for private & business reasons?	How many years have you know them?	What is the main reason for contact?		
					friendship and social enjoyment	information or advice of getting a task done	information on career guidance and opportunities

Who are your most important <u>Senior Managers/Executives</u> you are interacting with?

Please name maximum 2

Sirname	Name	Job title	How often do you contact them (by phone, mail or other ways) for private & business reasons?	How many years have you know them?	What is the main reason for contact?		
					friendship and social enjoyment	information or advice of getting a task done	information on career guidance and opportunities

The different questions were needed to shed light on the social network in terms of relationship duration, how often they contact them and for what reason in particular. It was for this questionnaire that the real names were needed to plot the sociogram and provide a foundation for further analysis as there was no other primary key available. The job title was established to verify the allocation of the participants to a specific group line manager, management accountant or executive and also to prevent mapping errors of similar names of different people.

4.3.7 Company sustainability

In this research the Company sustainability is defined to be eventually partially related to the enjoyment of employees. Therefore, it was deemed necessary to at least check with respondents on their view as to how sustainable they feel in their organisation. The sustainability factor is also a measure of performance. Both factors are impacted by trust and are worth to asking about. The question used was:

"Do you enjoy working for the company?"

This measure is self defined in this research to check sustainability. There is a degree of falsification involved adopting it and the researcher is aware that this is not the only way of defining sustainability. Due to resource constraints one definition had to be agreed on to move on with the research. This also supplements the other performance proxies mentioned in this research.

4.3.8 The full questionnaire

Three questionnaires were constructed one aimed at line managers, one for management accountants and one for senior managers. Each questionnaire had 10 sections. These sections are:

```
1 Introduction – data confidentiality
2 Social network analysis………………………..(70 Questions)
3 Trust dimensions………………………………(  8 Questions)
4 Cognitive / affective based trust………………(  4 Questions)
5 Impact of trust…………………………………..(  4 Questions)
6 Game theory / high or low trust strategies…...(  3 Questions)
7 Organisational tensions……………………….(  8 Questions)
8 State of the company…………………………..(  3 Questions)
9 Propensity to trust / trustworthiness………….(  6 Questions)
10 Characteristics / comments………………....(  8 Questions)
_____
```

Amount of questions per questionnaire: 114 – the amount of questions were later reduced in the questionnaire for the public organisation.

The questionnaire was made available in English in both organisations and as for the public organisation also in German.

4.3.9 Obtaining the sample

The nature of the questionnaire was non-anonymous. The application of the social network analysis and the necessary identification of the population for the triangulation of three different groups predetermined that names were required within the questionnaire.

250 companies were approached by informal and formal means. Roughly 50 companies replied. Most had concerns with the data security law particular in Germany, internal policies and confidentialty in general. Some concerns were raised by the work council and/or Human Resources in some organisations. Some others did not see a direct benefit for their participation in this research. A few organisations were going through restructuring and reported that they were too busy to participate. However, most were concerned that they might receive bad publicity if this research was to reveal something detrimental to the success of their organisation.

Attempts to provide companies with legal insurance "eidesstattliche Versicherung" that the data raised in the data collection is secure and will not be published unless they and/or the individual questionnaire participant agree were unsucessful. Also attempts to tailor the questionnaire to cater for the concerns of the relevant commercial business organisations were also unsuccessfull. The only company which agreed to participate was Zimmer GmbH in Winterthur.

In terms of public organisations: The University of Furtwangen, Germany wanted to participate and there was no need to find another organisation.

4.3.9.1 Pilot Study of Questionnaires

The pilot study was sent out to 10 employees within Zimmer GmbH in Winterthur, Switzerland, - Headquarters for Europe/Middle East and Africa. All employees work in or for operations (production and logistics department). Operations was not considered in the final study of Zimmer GmbH.

Three employees eventually responded. The three participants represented two questionnaire groups: Management Accountant (2) and Line Manager (1). As the questionnaire is similar for all three groups the executive group (0) was not

considered in the pilot study. It was decided to leave them out as it would have not been economic.

The following findings and revisions are documented:

- There was the impression that the naming convention: "Executives", which refers to representatives of the shareholder's interests was misunderstood. One respondent referred to their direct superior instead of their company-wide general executives. There were two reasons for this:
- Firstly the question: "name three executives you are mostly in contact with" can be misleading if the respondent is not in contact with such executives. He or she will likely refer to the departmental managers he or she is in contact with. Hence for someone's understanding the scope of executives might be different depending on the relevant hierarchy level the person is in. Secondly, there was a language barriers to understand the meaning of "executives". Additionally, the terminology 'executives' is not clear and there might not exist a general convention in business. In essence, every employee should represent shareholder's interest in a shareholding company. Then there might be the distortion between title and responsibility. Some employees might have an executive title but in fact do not act as executives, some others have rather small titles but work have responsibilities similar to an executive. This leads to a certain degree of falsification.

  The revision made was to add a description to explain what is meant by executives, (e.g. (Vice-) presidents, Board of directors, CFO, CTO, CEO, General Manager EMEA, Europe, etc.,) to prevent any greater misunderstandings.

- The methodology of how questions were raised was reported to be distracting in the social network formation part. One respondent reported that: "it creates a slight confusion whether my executives or the executives are meant".

- Font had to be adjusted as two members mentioned the font to be too small in some sections

- Due to high work pressure and vacation times the responses came in quite slowly some took more than two weeks. In order to prevent missing responses the final study contained a time window of at least four weeks for participants to send back their responses. As companies adhere to fiscal cut off times the questionnaire was sent out in the middle of a month to prevent management accountants to be too distracted during the monthly closing periods.

- Two respondents struggled with their electronic responses to the survey as the came out of the survey before completion (they had intended to complete the survey at a later date). Therefore, the settings were changed to allow responses to be edited retrospectively once a page or even when the entire survey is submitted. This gives respondents more flexibility to fill in the survey.

- Almost all participants found the survey too long. Therefore, questions with regard to religions were cancelled and the social network formation section was cut down to maximum of 2 executives, 4 management accountants and 4 line managers from orginally 3, 5, 5 and at the beginning 4, 8, 8.

There was no significant inconsistency between results of two different questions related to one dimension / research hypothesis. The maximum discrepancy identified in the result of one participant was no more than 2 points on a five point lickert scale in two pairs.

Time needed for completition was 30 minutes on average with a minimum of 25 minutes and a maxium of 35 minutes.

Questions related to gender, religion and age were asked in the Zimmer study but not in the Furtwangen case. This was necessary because of confidentiality.

The full questionnaire for both organisations Furtwangen University and Zimmer GmbH can be found in the appendices in Section 10.3 and 10.4.

4.3.10 Administration of Questionnaire

Following the advice of Brommiley and Cummings and the various definitions of trust the word trust was avoided in the questions as it was seen as an emotive challenge and might distort answers (Wiewiora et al 2010). Questions were adapted to the respective corporate organisational culture where necessary.

Complicated scientific language or words which are prone to be interpreted differently were avoided whenever possible. The questionnaire was addressed to three different populations in the commercial business organisation. The different groups involve management accountants, line managers and senior management. The triangulation between management accountants and the other two stakeholders is seen to be most promising to shed light on these interactions.

There are three different questionnaires for each population. They are standardised as much as possible. Changes such as the object (naming conventions) or the descriptions were incorporated. In some cases questions could not be asked to all groups involved if they were not applicable.

The analysis of the questionnaires involved simple descriptive statistics, general linear modelling and factor analysis.

The timing of questionnaire submissions was thought to be critical as it might cause discrepancies. In order to prevent changes the questionnaires were distributed and answers requested within a 30 day time frame.

Chapter 5

5   Zimmer GmbH - Investigative Study

In this chapter a study of the accounting relationships in a large Swiss / American medical devise manufacturing company is reported. This study is applying the conceptual models developed in Chapter 3, which have been constructed from the literature in Chapter 2. The goal of this study is to test the research hypotheses of the models developed and recognised.

Beginning with exploring personal trust questions the personal trust dimensions are developed. Similarly questions from cognitive and affective based trust, impact of trust and organisational tensions were explored and factors derived for establishing dimensions. For all dimensions a comparison is made to ascertain the differences between line managers, management accountants and executives. Additionally, the interaction between dimensions are explored by using Pearson correlations. This is conducted in section 5.2 after a brief description of the company in the study and the sample. Later (section 5.2.1) the dimensions are analysed to understand how they are affected by the respondents position in the social network of the organisation and how the position of the respondent effects the trust levels of the organisation. Some qualitative interviewing was undertaken and an analysis of the interviews is presented in section 5.2.2. Finally, ways in which the queationnaire can be reduced and simplified for the next study are considered and a summary of the chapter is presented.

In this chapter the results of the first of the studies are reported. First the situation of the company is reported. Then the general questions pertaining to trust are investigated to determine if there is validation for the dimensions of trust. This is then followed by the use of social network analysis to understand how perceptions of trust are affected by the respondent's position in the social structure of the organisation and their contacts.

Pearson correlations are used to test the research hypotheses and hence reveal the relationships between different dimensions. Later a pathway model is developed with AMOS software (2012) to explain the influences of trust on organisational performance.

5.1 Background

The scope of the investigative study is on Zimmer GmbH Winterthur, Switzerland the headquarters for Europe/Middle East and Africa with exception of operations (Logistics and Production) as they have been part of the pilot study already. Zimmer designs and develops, manufactures and markets orthopaedic devises. Zimmer "has operations in more than 25 countries around the world and markets its products in more than 100 countries" (Zimmer Holdings 2009, page 44). Zimmer's sales in 2009 totaled $4.1 billion (Zimmer Holdings 2009, page 5) and is the "world market leader in orthopaedic products" (Simon 2009, page 44). Zimmer was further mentioned several times in the book from Simon where he claims the Zimmer company to be a "hidden Champion" (Simon 2009 page 7, 44, 214, 215 - 247) A hidden champion refers to a company which is best in class but not known by the majority of people. As of 2009 Zimmer had 8200 employees worldwide (Zimmer Holdings 2009, page 12) and 1000 employees work in Winterthur, Switzerland. Zimmer is a classical matrix organisation with functions reporting across different legal entities.

The human resources, compliance and internal audit departments all cover line management tasks and accounting tasks. Due to their dual nature it was impossible to classify them as either line managers or management accountants. Hence, they fit into either population and because of this they were not included in the study. As Operations was part of the pilot study already it was not included in the final study to prevent bias because participants of the pilot study were interviewed and their results were discussed to find out what they thought when they filled the questionnaire. Hence, the interviews would likely have an impact on the results of pilot-participants in the final study.

Additionally, operations is a part of a different legal entity and has partially different reporting lines, which would additionally influence results. As this is already known it would not add much news and would rather distort the research results.

Participating departments of the final study are: IT (Information Technology), Research, Development, Marketing Up & Downstream, Communication, Sales, Dental Business Unit, Surgical Business Unit, Legal, Accounting, Treasury, Bookkeeping and all Reportingfunctions, Quality, Clinical Affairs, Academic Institute Group, Trade marks, Government Affairs, Regulatory and others. These departments cover most of Zimmer's activities. Operations would have added another 22 and the other non-participating departments another 15 line managers, executives and accountants to the sample. However, the final coverage includes 130 line managers, executives and accountants of participating departments, which stand against 35 people of non-participating departments.

In many organisations there is a tendency that cost center managers are classified as line managers. While some line managers manage only one cost center there are often line managers who manage several if not numerous cost centers.
This is often dependent on the management system the individual organisation chooses to apply and the area of responsibility.

The people who control groups of cost centers usually are higher ranked line managers but not yet executives.

Though separation is never completely clear, executives rarely have direct cost center responsibility. They manage entire departments and require a higher level of aggregated information to make decisions. Therefore, they usually make decisions based on higher level reports meaning reports of more aggregated information.

Management accountants normally use the cost centers as a basis for financial reporting, resource allocation and decision making. They filter information and produce reports in such a way as to create transparency and provide decision making material to the executives. However, in addition to cost centers, the same classification can be assumed for profit centers, general ledger accounts (balance sheet accounts / cost element accounts) where similar controllership is exercised in most organisations.

The questionnaire was sent out to 130 individuals and received a response rate of 28.46% (see table 5.1). The author, though working in Zimmer GmbH at the time did not participate in this research as there is the possibility that while being involved directly in the organisation and simultanously doing research the results might be biased by selective reporting.

Previously over 200 other companies and organisations refused participation and Zimmer GmbH was the only remaining viable option. The reason why access was granted to conduct this research was because Zimmer GmbH knew the researcher and were assured that confidentiality would be respected.

Table 5.1 Response rate Zimmer GmbH

type of population	size	received questionnaires	response rate
Executives	10	5	50.00%
Management Accountants	24	12	50.00%
Line Managers	96	20	20.83%
Total	**130**	**37**	**28.46%**

The questionnaire was sent in the form of an internet link surveymonkey (surveymonkey 2011) and was distributed through personalised emails in the English language. Time given to participants for completion was approximately four weeks and frequent reminders were required during this period.

A summary profile of the sample is listed in Table 5.2

Table 5.2 Characteristics of Sample

	Executives	Management Accountants	Line Managers
Population	10	24	96
Received Questionnaires	5	12	20
Response Rate	50%	50%	21%
Gender			
% Male	100%	75%	60%
Qualifications			
% with a degree	20%	17%	40%
% with masters or higher	80%	83%	60%
Years of professional experience			
1-20 years	60%	67%	75%
20+ years	40%	33%	25%

5.2 Testing of research hypothesis generated from the conceptual models

The mean scores and standard errors of questions relating to aspects of personal trust for each of the groups of employees, recorded on a Likert scale: (5) means strongly agree and (1) strongly disagree are displayed in Table 5.3

Table 5.3 Mean scores and standard errors of the personal trust questions by function

Question	Line Manager		Executive		Management Accountant		All	
	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error	Mean	Std. Error
My needs and desires in my job are very important to Management Accountants.	3.45	.170	4.00	.316	3.36	.279	3.50	.135
I can count on the Management Accountants to help me if I have difficulties with my job or decision making.	3.80	.138	4.40	.245	4.08	.193	3.97	.106
Management Accountants are open and up front with me.	3.80	.172	4.40	.400	3.50	.230	3.78	.135
Management Accountants really look out for what is important to their Line Managers.	3.55	.153	4.20	.374	3.50	.195	3.62	.118
Management Accountants have a lot of knowledge about the work that needs to	3.65	.209	4.40	.245	4.00	.246	3.86	.146

be done.								
Management Accountants are known to be successful at the things they attempt to accomplish.	3.55	.135	3.60	.245	3.58	.149	3.57	.091
If I make a mistake the Management Accountants are willing to 'forgive and forget.'	3.60	.184	3.60	.510	3.50	.230	3.57	.137
It is best not to share information with the Management Accountants.	2.10	.261	1.80	.200	2.58	.313	2.22	.178

For all functions the means of the results relating to trust were significantly higher at the 5% level than the neutral score of 3 except for the last question which exhibited negative behaviour - it was significantly lower than 3 (t-tests were used to test for significance). Thus it seems most respondents in the organisation scored high in terms of evaluating trust. Although mainly as a consequence of the small sample size no significant differences between the functions could be detected. Executives scored higher than line managers and management accountants.

These questions were resolved using factor analysis into three factors which we term the "Vulnerability", "Benevolence" and "Concern". This preserved 73.59% of the original variance and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.71 and Bartlett's test of Spericity was significant (p<0.001) indicating that the resolution was satisfactory. The rotated component matrix is displayed in Table 5.4.

Table 5.4 Rotated Component Matrix of Trust Dimensions

Dimensions	Questions	Component		
		Vulnerability	Benevolence	Concern
Competence	Management Accountants have a lot of knowledge about the work that needs to be done.	0.866		
Vulnerability1	Management Accountants are open and up front with me.	0.832		
Vulnerability2	It is best not to share information with the Management Accountants.	-0.765		
Reliability1	I can count on the Management Accountants to help me if I have difficulties with my job or decision making.	0.720		0.461
Benovelence2	If I make a mistake the Management Accountants are willing to 'forgive and forget.'		0.887	
Reliability2	Management Accountants are known to be successful at the things they attempt to accomplish.	0.571	0.629	
Concerned1	My needs and desires in my job are very important to Management Accountants.			0.907
Benevolence1	Management Accountants really look out for what is important to their executives.	0.511	0.340	0.514
Amount of Variance explained		46.25%	14.55%	12.80%

The Impact of Trust Model

Having established measures of trust one can now test research hypothesis 3I and 5I of the "Impact of Trust Model" that the level of trust directly influences the performance of the organisation. Three questions were asked which are of relevance to performance; these are shown in Table 5.5

Table 5.5 Impact of trust model – Mean, Standard Deviation and Sample by Question

Descriptive Statistics

Dimensions	Questions	N	Minimum	Maximum	Mean	Std. Deviation
Successful Business Relationship (The general trust question)	Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	35	2	5	3.51	1.011
Sustainable Business	Do you enjoy working for the company?	37	2	5	3.81	.877
Performance	Given the market conditions would you consider your company to be successful?	37	3	5	3.84	.727

The dimensions of trust are now correlated with these questions and the Pearson correlation coefficients are displayed in Table 5.6

Table 5.6 Pearson correlation coefficients - trust by performance

Trust Dimension		Successful Business Relationship	Sustainable Business	Performance
Vulnerability	Pearson Correlation Coefficient	.157	-.056	-.174
	P value	.376	.746	.309
Benevolence	Pearson Correlation Coefficient	.347	-.063	.084
	P value	.045	.715	.625
Concern	Pearson Correlation Coefficient	.175	.111	.190
	P value	.322	.519	.266

There was no signficant correlation between the trust dimensions and performance in the Zimmer Study. This however could be related to many factors. Firstly, performance is related to many different factors not only trust. Secondly, there are phasing issues as perception of performance as of today is the effect of decisions made and resulting action of previous years and sometimes dating back decades. When a company has been very successful for many years and assuming that trust levels are very high, and one particular year has not gone well, the trust levels might still be the same but the perception of performance is likely to be reported lower in the particular period. Perception of performance is likely viewed by employees over a one year horizon while trust levels are probably the result of many years of collaborating with one another. This phasing issue can only be prevented by taking into account more time periods and longer study times.

Similarly, sustainability is affected when the performance of the company drops and measures taken by management resulting in lower motivation and enthusiasm amongst staff. Likewise, the sustainability is likely affected by other variables.

It can be concluded that when performance and sustainability levels increase the trust levels appear to be detached from such developments at least for a short term of one year or more. It appears that trust and performance / sustainability are two different variables which need to be investigated in more detail over a longer period of time to prevent phasing issues in future research.

The success of business-relations which is clearly associated with performance, however correlates with one trust dimension. Therefore, it can be construed that research Hypothesis 3I is partially verified with benevolence.

Research Hypothesis 4I stated that "the level of trust between management accounting and line managers impacts opportunistic behaviour. To test this, the trust dimensions were correlated with questions relating to control and these correlations are displayed in Table 5.7.
As affective and cognitive based trust dimensions are similar measures compared to the questions related to the other trust dimension they are also included in the table below to further add reliability on the trust dimensions and to partially support also Research Hypothesis 4I.

Table 5.7 Pearson Correlations Control vs. Trust

Dimensions		Affect & Cognition	Good relations between Line Managers and Management Accountants help to control your business	Management Accountants enable you with good information to suggest (or make) changes.
Vulnerability	Pearson Correlation	.483	.186	.368
	Sig. (2-tailed)	.003	.276	.027
Benevolence	Pearson Correlation	.335	-.043	.282
	Sig. (2-tailed)	.046	.804	.095
Concern	Pearson Correlation	.266	.216	.385
	Sig. (2-tailed)	.117	.207	.020
Affect & Cognition	Pearson Correlation	1	.382	.704
	Sig. (2-tailed)		.020	.000
Good relations between Line Managers and Management Accountants help to control your business	Pearson Correlation		1	.453
	Sig. (2-tailed)			.005

For the first question regarding control no support for research hypothesis 4I was evident but there was evidence from the correlations with the second question that the level of trust was positively associated with control. Additionally, there is significant support that affective and cognitive based trust can be strongly associated with increased control. Thus research hypothesis 4I can be partially accepted.

Research Hypothesis 1I of the impact of trust model stated that the level of trust between line managers, executives and management accountants impacts transactions costs. The correlations are tabulated below.

Table 5.8 Pearson Correlations Trust vs. Impact of Trust

Dimension		Trans_cost1	Tans_cost2
Question		Good relation to Management Accountants provides more access to resources, information and / or funds for your department	Management Accountants support us to make decisions
Vulnerability	Pearson Correlation Sig. (2-tailed)	.326 .052	.142 .410
Benevolence	Pearson Correlation Sig. (2-tailed)	.217 .204	.180 .293
Concern	Pearson Correlation Sig. (2-tailed)	.084 .627	.282 .095
Affect & Cognition	Pearson Correlation Sig. (2-tailed)	.501 .002	.483 .002
Trans_cost1	Pearson Correlation Sig. (2-tailed)	1	.471 .003

There is no significant correlation between the transaction costs and the trust dimensions, however all correlations are positive so this gives a degree of support for research hypothesis 1I.

Factor analysis was also used in the affective- and cognitive-based trust and impact domains of the questionnaire in order to reduce the number of questions

and create underlying dimensions to reflect affective- and cognitive-based trust. The principle components generated are summarised in Table 5.9.

Table 5.9 Principle components of affective- and cognitive-based trust and Impact of Trust

Affective- and cognitive-based trust		Impact of trust	
Question	Loading	Question	Loading
Management Accountants greet you warmly, being friendly, never crabby or rude	.730	Good relation to Management Accountants provides more access to resources, information and / or funds for your department	.737
Management Accountants are encouraging you and checking on your progress	.698	Management Accountants support us to make decisions	.843
Management Accountants are demonstrating competency to diagnose and manage your problems	.820	Good relations between Line Managers and Management Accountants help to control your business	.743
Referring to a specialist when needed; readily admitting if he/she doesn't know something	.824	Management Accountants enable you with good information to suggest (or make) changes.	.825
KMO	.690		0.736
% Variance Accounted for	59.28%		62.20%

Affective- and cognitive-based trust is represented by one component accounting for 59.28% of the variation and this should be associated with the trust dimensions. Using Peason correlation analysis significant correlations, at the 5% level between affect and cognition and vulnerability and benevolence were found (the respective correlation coefficients were 0.483 and 0.335). However, although positive the correlation between affective- and cognitive-based trust and concern was not significant. This gives some internal validity through consistency with the trust dimensions and affective- and cognitive-based trust had a positive correlation with successful business relationships and both the control questions. Affective- and cognitive-based trust was strongly correlated with transaction costs with correlation coefficients for "good relations with line managers provides more access to information" and "line managers

support us with information to provide them with guidance" of 0.501 and 0.483 respectively, (significant at the 1% level).

In this research the proposed concepts in the impact of trust model is that trust impacts on transaction costs and the opportunistic behaviour of managers. These in turn impact on organisational efficiency and effectiveness (Research Hypothesis 2I and 5I). This is tested by computing the correlation between the relevant questions and the output measures and these are reported in Table 5.10.

Table 5.10 Pearson Correlation Impact vs. Performance

Factor	Question		Successful Business Relationship	Sustainable Business	Per-formance
Trans_cost1	Good relation to Management Accountants provides more access to resources, information and / or funds for your department	Pearson Correlation	.146	-.153	-.142
		Sig. (2-tailed)	.403	.366	.402
Tans_cost2	Management Accountants support us to make decisions	Pearson Correlation	.093	-.260	-.066
		Sig. (2-tailed)	.596	.120	.699
Control1	Good relations between Line Managers and Management Accountants help to control your business	Pearson Correlation	.180	-.061	-.038
		Sig. (2-tailed)	.302	.722	.825
Control2	Management Accountants enable you with good information to suggest (or make) changes.	Pearson Correlation	.284	-.078	-.035
		Sig. (2-tailed)	.099	.646	.835

There is no evidence to accept research hypotheses 2I and 5I and so this link in the model is questionable.

The impacts of trust questions were formed in to one factor accounting for 62.20% of the orginal variation and this was termed "Impact", see Table 5.9.

In regard to the impact trust model the dimensions are now used in a path model (AMOS 2012, Arbuckle 2010) to simultaneously test the research hypothesis and investigate the effect on business relations. In order to reduce complexity the impact factor was used instead of control and transaction costs. The model is displayed in Figure 5.1 and the coefficents in Tables 5.11.
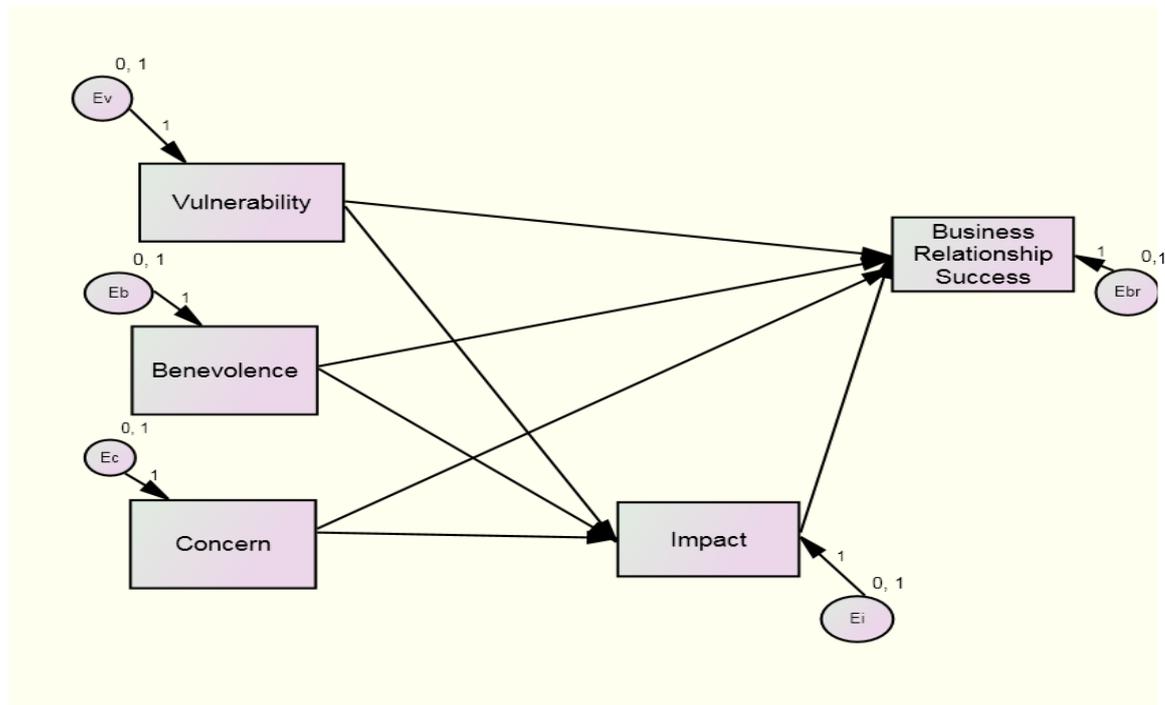
Figure 5.1 Path way model Trust vs. Impact vs. Business Relationship success

Table 5.11 Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Impact	<---	Benevolence	.203	.168	1.206	.228	
Impact	<---	Concern	.312	.168	1.854	.064	
Impact	<---	Vulnerability	.321	.168	1.909	.056	
Business Relationship Success	<---	Impact	.084	.172	.487	.626	
Business Relationship Success	<---	Benevolence	.333	.177	1.886	.059	
Business Relationship Success	<---	Concern	.159	.182	.877	.380	
Business Relationship Success	<---	Vulnerability	.131	.182	.721	.471	

Although showing the expected signs the correlations are weak and most of the coefficients are not significant, and the model did not fit well having a poor descriptive power.

Organisational Tension Model

To understand the degree of organisational tensions that might inhibit trust development, eight questions were asked and using factor analysis with varimax rotation they were resolved into three factors titled internal, cultural and personal tensions, as shown in Table 5.12. The factors accounted for 67.12% of the orginal variation and the Kaiser-Mayer-Olkin statistic showed the sampling adequacy of the procedure with a value of 0.60, (Bartletts Test of sphericity was also significant, p = 0.001).

Table 5.12 Components of Organisational Tensions

Questions	Factor		
	Internal	Cultural	Personal
Organisational tensions between Management Accountants and Line Managers are strong.	**.855**		
Line Managers in general have a negative reputation	**.762**	**.330**	
Line Managers are too close to Senior Management.	**.722**		**-.376**
Line Managers lack of financial understanding.		**.737**	
It is difficult filling this questionnaire because I am afraid of the consequences.		**.714**	
It is more difficult to work with people with different backgrounds (such as different nationality, religion, political views, etc.)		**.708**	
I would go on a sporting or social outing privately with Line Managers or Senior Managers in my free time.		**-.320**	**.812**
I would rely on Line Managers if they would be willing to provide me with advice for example building of my house.	**-.375**		**.742**
KMO	**0.6**		
% variance accounted for	**25.80%**	**22.10%**	**18.30%**

The derivation of these factors partially confirms research hypothesis 1T, 2T and 3T of the organisational tensions model. These dimensions (factors) are

now related to business efficiency and effectiveness. These are tabulated in Table 5.13

Table 5.13 Pearson Correlations Tensions vs. Performance

		Business Relationship Success	Sustain-able Business	Perform-Ance	Vulner-ability	Bene-volence	Concern	Affect & Cognition
Internal Tensions	Pearson Correlation	-.184	.062	.090	-.369	.002	.149	-.224
	Sig. (2-tailed)	.304	.722	.606	.032	.993	.400	.195
Cultural Tensions	Pearson Correlation	-.172	.099	.303	-.435	-.099	.179	-.252
	Sig. (2-tailed)	.338	.571	.077	.010	.577	.312	.144
Personal Tension	Pearson Correlation	.270	-.099	.274	.216	.465	.075	.293
	Sig. (2-tailed)	.128	.571	.111	.220	.006	.674	.088

There are few significant relationships. For the tensions, although there are no significant correlations with business relationships the signs of the correlation coeficients are in the anticipated direction. As internal and cultural tensions are high then business relationships deteriorate. In the personal dimension high values mean low tension so high values of this dimension are positively correlated with business relationships. For the other more external business measures there looks to be an association, and this is perhaps to be expected as external market pressures probably dictate these more than internal tensions. For the trust dimensions internal and cultural tensions negatively effect vulnerability (significant at the 5% level) and low personal tension is positively correlated with vulnerability although this is not significant. There are no significant correlations between benevolence and internal and cultural tension however personal tension is significantly positively associated with benevolence, indicating that low personal tension is associated with high levels of benevolence. There is no significant correlation between the tensions and the concern trust dimension. The proxy for trust "affective- and cognitive-based trust" has no significant correlations but the signs of the coefficients are all in the expected direction. From this one observes that there is some support for

research hypothesis 4T that there is an association between trust and tensions. Research Hypothesis 5T related to tensions and business efficiency and effectiveness. Here only weak support is found for research hypothesis 5T in that there is a suggested association in the expected direction between business relations (more of an internal measure of efficiency and effectiveness) and the tensions. A path model is now constructed to verify these findings and this is presented in Figure 5.2 and the coefficients are displayed in Table 5.14.
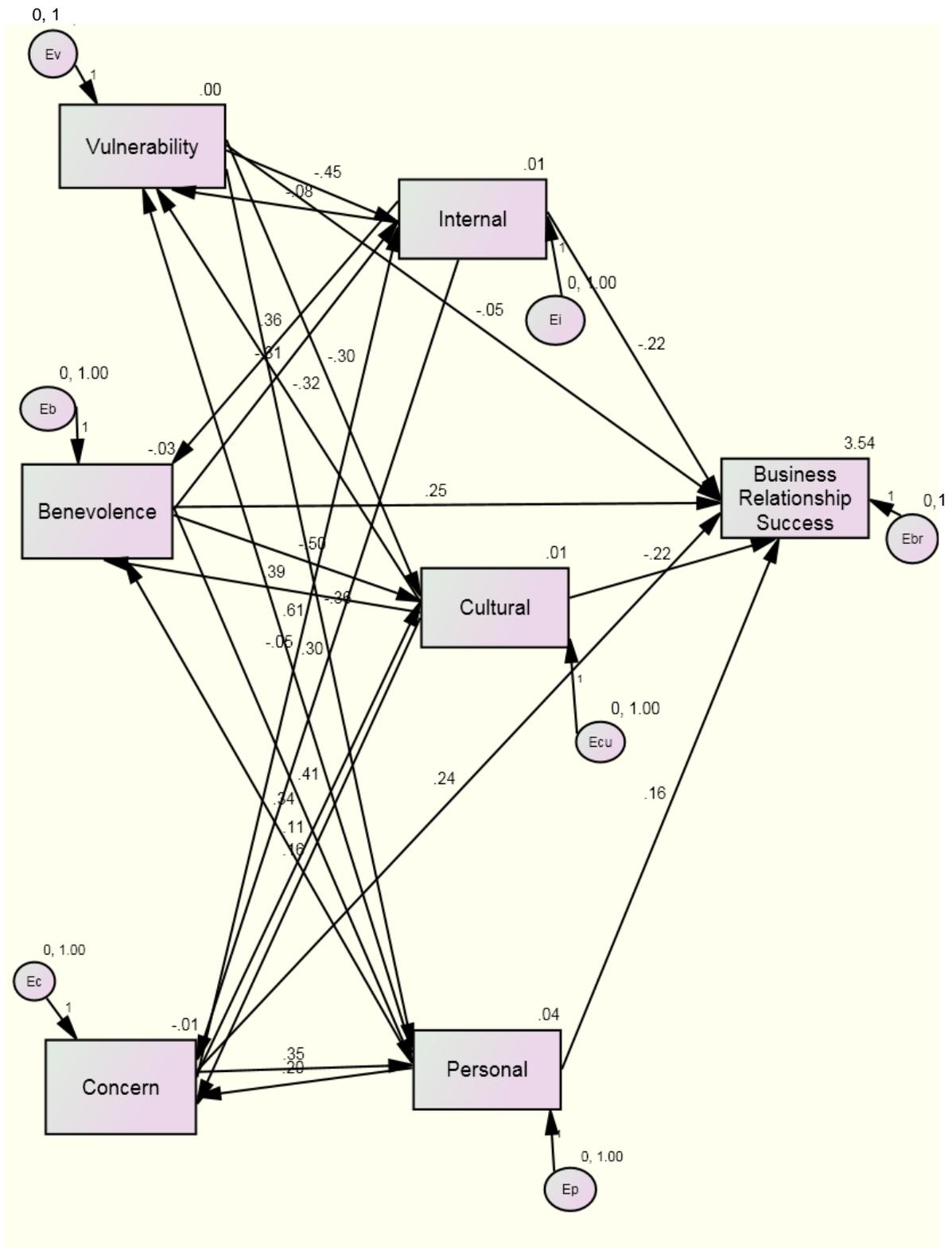
Figure 5.2 Pathway Model Trust vs. Tensions vs. Business Relationship Success

Table 5.14 Coefficients Pathway Model

			Estimate	S.E.	C.R.	P	Label
BUSINESS RELATIONSHIP SUCCESS	<---	INTERNAL TENSION	-.222	.195	-1.139	.255	
BUSINESS RELATIONSHIP SUCCESS	<---	BENEVOLENCE	.247	.215	1.150	.250	
BUSINESS RELATIONSHIP SUCCESS	<---	CONCERN	.244	.185	1.317	.188	
BUSINESS RELATIONSHIP SUCCESS	<---	VULNERABILITY	-.053	.209	-.252	.801	
BUSINESS RELATIONSHIP SUCCESS	<---	PERSONAL TENSION	.164	.219	.748	.454	
BUSINESS RELATIONSHIP SUCCESS	<---	CULTURAL TENSION	-.215	.199	-1.080	.280	
INTERNAL TENSION	<---	BENEVOLENCE	-.307	.322	-.952	.341	
INTERNAL TENSION	<---	CONCERN	-.047	.394	-.118	.906	
INTERNAL TENSION	<---	VULNERABILITY	-.452	.286	-1.579	.114	
CULTURAL TENSION	<---	BENEVOLENCE	-.502	.274	-1.832	.067	
CULTURAL TENSION	<---	VULNERABILITY	-.299	.304	-.983	.326	
PERSONAL TENSION	<---	CONCERN	.349	.304	1.146	.252	
VULNERABILITY	<---	INTERNAL TENSION	-.077	.298	-.258	.796	
BENEVOLENCE	<---	CULTURAL TENSION	.387	.258	1.503	.133	
CONCERN	<---	PERSONAL TENSION	-.199	.320	-.624	.533	
CULTURAL TENSION	<---	CONCERN	.105	.386	.272	.785	
CONCERN	<---	CULTURAL TENSION	.164	.391	.420	.675	
VULNERABILITY	<---	CULTURAL TENSION	-.315	.296	-1.066	.286	
VULNERABILITY	<---	PERSONAL	.612	.248	2.469	.014	

			Estimate	S.E.	C.R.	P	Label
PERSONAL TENSION	<---	TENSION VULNERABILITY	-.357	.229	-1.561	.118	
BENEVOLENCE	<---	INTERNAL TENSION	.359	.309	1.161	.245	
BENEVOLENCE	<---	PERSONAL TENSION	.338	.293	1.153	.249	
CONCERN	<---	INTERNAL TENSION	.302	.381	.793	.428	
PERSONAL TENSION	<---	BENEVOLENCE	.411	.296	1.387	.166	

The propensity to trust aimed at looking for differences in attitudes of respondents. The aim was to identify the preference for stricter control or more independence in the organisation. The underlying assumption was that people who prefer stricter control are not so trusting and might not facilitate a "trust organisation" with higher trust levels, while those who are willing to share information contribute positively to trust. To investigate this, questions associated with propensity to trust were formed into two factors using factor analysis varimax rotation and the rotated components are displayed in Table 5.15.

Table 5.15 Rotated Component Matrixa Propensity to Trust

Questions	Component	
	Sharing	Control
My colleagues in general share important company information with me	0.880	
My colleagues in general share important personal information with me	0.876	
To bring control to a company independent people are important		
Clear descriptions and written documents (including emails) are better for the success of the business than more informal ways of communication		0.782
Strict control is better than being dependent informally on others in the company for the success of the business.		0.765
Bringing control to a company can be achieved by hiring competent and reliable people	0.384	0.718
Amount of variance explained	30.24%	21.13%

The KMO and Bartlett's test were satisfactory and these factors accounted for 51.37% of the orginal variation. There were two research hypothesis connected with propensity to trust, these are:

H[1P] = High Trusters (measured as those willing to share information) contribute positively to trust levels in organisations

H[2P] = Low Trusters (measured by those wishing to have formal control) contribute negatively to trust levels in organisations

To test these research hypotheses the factors of sharing information and formal control are correlated with the trust dimensions and also the proxy for trust

(affective- and cognitive-based trust). The table of correlation coefficients is displayed below.

Table 5.16 Pearson Correlations Propensity to Trust vs. Trust Dimensions

		Vulnerability	**Benevolence**	**Concern**	**Affect & Cognition**
Sharing Information	Pearson Correlation	-.015	.378	.254	.261
	Sig. (2-tailed)	.931	.025	.141	.124
Formal Control	Pearson Correlation	.096	-.334	.108	.059
	Sig. (2-tailed)	.585	.050	.537	.730

The only significant correlations are with sharing information and benevolence and formal control and benevolence (correlation coefficients of 0.378 and -0.334 respectively both significant at the 55 level). Thus research hypotheses 1P and 2P referred to above are only accepted when trust is considered as benevolence.

How the above factors vary with organisational function is illustrated on the radar plot in Figure 5.3.
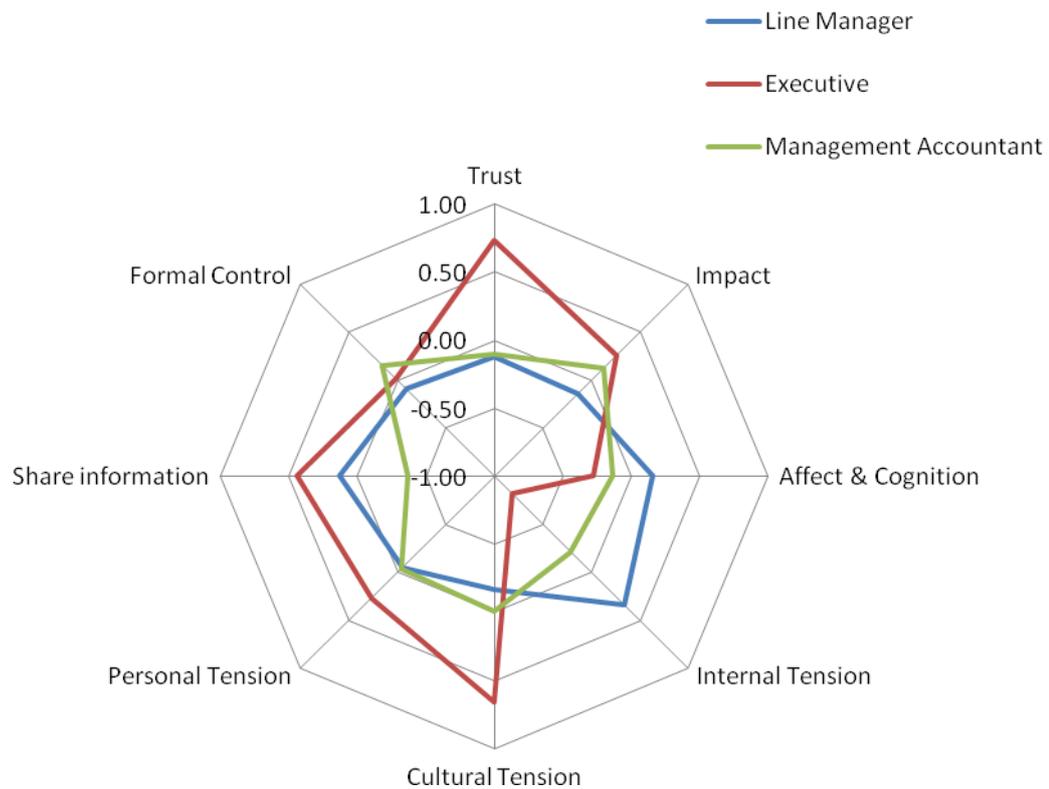
Figure 5.3 Radar plot of mean scores for each organisational function

In terms of trust, executives score high on the trust dimension, and this could be linked with information sharing, where executives score very high. Executives stress cultural tensions but seem to attach little importance to internal tensions. Management accountants score medium on trust but attach importance to control while line managers seem to report medium values of all factors with the exception of reporting higher levels of internal tension and hence portray a balanced view.

A set of three questions were asked to determine the prevailing norm in regard to trust. The questions were:

1. Do you think that things done for others should be rewarded quickly. In which high scores would show a preference for low trust?

2. Do you think that things done for others should finally be compensated one day? Here high scores suggest medium trust and:

3. I think that somebody who has helped others should not necessarily be compensated? High Scores here suggest a preference for high trust.

The answers to this set of questions were compared and preferences noted - the majority of line managers (40%) preferred a low trust strategy, while the majority of executives (60%) preferred high trust and the majority of management accountants (35%) expressed a preference for medium trust but the differences were not significant.

The factors reported were correlated to self reports of how successful they perceived the company to be, and whether they enjoyed working in the company and the degree to which people can be trusted. The Pearson correlation matrix is displayed in Table 5.17.

Table 5.17 Pearson correlations

	Vulner-ability	Bene-volence	Concern	Impact	Affect & Cognition	Internal Tensions	Cultural Tensions	Personal Tension	Formal Control	Sharing Informa-tion	Perfor-mance	Sustain-able Business
Vulner-ability	1	.000	.000	.323	.483	-.369	-.435	.216	.096	-.015	-.174	-.056
Bene-volence	.000	1	.000	.207	.335	.002	-.099	.465	-.334	.378	.084	-.063
Concern	.000	.000	1	.315	.266	.149	.179	.075	.108	.254	.190	.111
Impact	.323	.207	.315	1	.660	-.295	.002	.407	.067	.314	-.087	-.178
Affect & Cognition	.483	.335	.266	.660	1	-.224	-.252	.293	.059	.261	-.081	.072
Internal Tensions	-.369	.002	.149	-.295	-.224	1	.000	.000	.000	-.048	.090	.062
Cultural Tensions	-.435	-.099	.179	.002	-.252	.000	1	.000	.129	.034	.303	.099
Personal Tension	.216	.465	.075	.407	.293	.000	.000	1	.037	.321	.274	-.099
Formal Control	.096	-.334	.108	.067	.059	.000	.129	.037	1	.000	.404	.299
Sharing Informa-tion	-.015	.378	.254	.314	.261	-.048	.034	.321	.000	1	.235	-.023
Perfor-mance	-.174	.084	.190	-.087	-.081	.090	.303	.274	.404	.235	1	.430
Sustain-able Business	-.056	-.063	.111	-.178	.072	.062	.099	-.099	.299	-.023	.430	1
Business Relationships Success	.157	.347	.175	.224	.325	-.184	-.172	.270	-.369	.206	-.176	.068

Dark Green highlights research hypothesis is supported, dark red highlights research hypothesis is not supported. Light green shows anticipated tendency, light red shows no anticipated direction. Dark Green means research hypothesis is supported at the P < 0.05 level and thereby significant, bright green means that the research hypothesis is slightly supported at around P < 0.10 level, dark red means research hypothesis is not supported but the

relationship is significant at the P < 0.05., bright red means that the research hypothesis is not supported and there is no significant relationship recognisable.

From Table 5.17 it can be observed that the measurement of trust is validated as it strongly correlates with impact and affective- and cognitive-based trust. It appears as expected from theory that cultural and internal tensions correlate negatively with trust. However personal tensions seem to correlate positively with trust. Although there are positive correlations between trust and "business relationship success" and negative correlations between tensions and "business relation success" they are not very significant. Perhaps with more data, more significant associations would appear and theory would be supported. The overall levels of trust (taken from Table 5.3) and attitudes to the company are tabulated in Table 5.18.

Table 5.18 Levels of trust and Perceptions about the Company

	Vulner-Ability	Bene-volence	Concern	Business Relationship Success	Sustain-able Business	Perform-ance Perception
Line Managers	-.128	.141	-.129	3.58	4.10	3.90
Executives	.610	-.050	.768	4.20	4.20	4.00
Mngt. Accountants	-.046	-.234	-.120	3.09	3.17	3.67
Total	.000	.000	.000	3.51	3.81	3.84

From the analysis so far it would seem that executives have higher levels of trust and have more enjoyment (Sustainable Business dimension) while management accountants have less trust and lower levels of enjoyment. It is likely that executives have more enjoyment because they have power and privileges – also better information status than the other two groups and often higher levels of education, which was found to be positively associated with trust in the European Quality of Life Survey already in the appendice.

Line managers show similar trust levels as management accountants and view the companies success higher than management accountants but not as optimistic as executives. Mangement accountants show the lowest levels of trust, performance view of company and enjoyment at work compared to the other two groups. It could be assumed that this is the case in most organisations.

5.2.1 Social Network formation and Type of Network

To understand how the position of people in the organisation might influence trust a social network analysis was undertaken.

Five questions were asked to identify the nature of the relations between the respondents and this allowed the network of contacts to be formed.
The respondents (or egos) were asked to name their contacts as line managers, executives and management accountants (alters). Based on this the network of contacts between management accountants, executives and line managers was formed. The tie strength was computed from the answers to the following five questions:

> How often do you contact your colleagues by phone, mail or other ways for private & business reasons?

How often do you contact them for reasons of friendship and social enjoyment?

How often do you contact them for information or advice of getting a task done?

How often do you contact them for information on career guidance and opportunities?

How many years have you known them?

There was one answer given to each contact and question. The different questions related to the type of importance of the contact in order to understand the type of the network. The score resulted then into the frequency of the contact per relationship type, (scored 1 (rarely e.g. once a year) to very infrequently to 5 (very frequently e.g. daily)). The only exception was the question related to how many years respondents knew their contacts. This was set with (scored 1 (known for 0-1 years) to known for a long time to 5 (known for +10 years)).

The product of these scores gave a proxy for tie strength. This then gave the strength of the tie between the ego and their alter. These contacts were then used to form a matrix of contacts which was input into the social network package UCINET 6.0.

To visualise this NETDRAW in the UCINET vol. 6 (Borgatti et al 2002) was used to produce a sociogram, which is displayed in Figure 5.4.

There are a number of limitations on doing Social Network analysis. In this research tie strength was computed from frequency and importance. While some survey participants might communicate frequently about mundane topics and importance here is self reported other colleagues in the same network might not think that the content of the talk is as important as reported. Therefore,

self reporting importance might be a critical issue in this research as it might distort results and not capture the phenomen well enough.
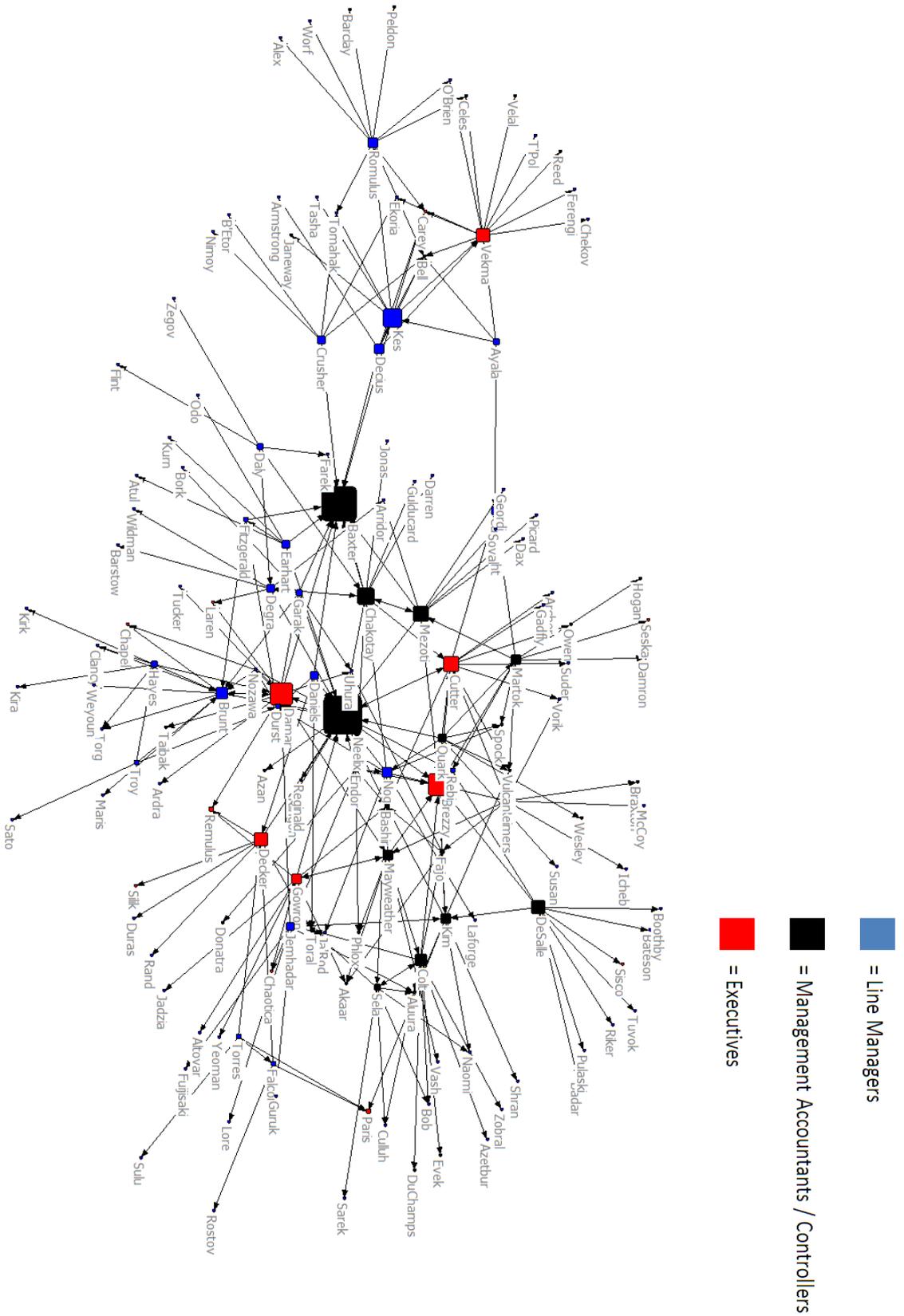
Figure 5.4 Social Network in Zimmer

= Executives

= Management Accountants / Controllers

= Line Managers

The sociogram in Figure 5.4 shows two main networks of which the smaller one is Dental and the bigger one comprising all other departments. The Dental network is discussed later.

The central group in this network are the management accountants. While the line managers are in the periphery of the network the executives are also very central. Four management accountants are very central and are surrounded by executives who are in bridge positions to line managers. These individuals appear to be the individuals with the strongest and closest ties. However, some management accountants who are less central and outside the main ring appear to have an important job of linking in the executives and line managers.

The sociogram displayed in Figure 5.4 shows the network, which was examined but outside of the Headquarter EMEA there are also networks of other subsidiaries and also networks of people within Zimmer GmbH who do not qualify as line managers, management accountants and executives. These people might be an integral part of the informal network but this will not be taken in account. This might result in a bias. However, due to the hierarchical and geographic baundaries - all subsidiaries are located in different cities/countries and mainly report to the EMEA Headquarter and not to each other) the impact of subsidiaries is likely not very big. The individuals of other departments, which did not fall into the category of line manger, management accountant or executive were very limited. Therefore, it can be construed that the problem is not very big.

We are now going to examine the social network variables which are measured by the strength of the ties, which will be formed from the answers to the following questions.

5.2.1.1 Zimmer Social Network

Within Zimmer GmbH as illustrated in Figure 5.4 Management Accountants appear to be linked within in the organisation very well and appear to be bridges for all others to interact. Their average prestige and centrality is much higher than those of Line Managers but not as high as the executive group.

As for the question: *How often do you contact your colleagues by phone, mail or other ways for private & business reasons?* the network of the management accountants reveals in Figure 5.5 that they are central and well linked with each other.

= Management Accountants
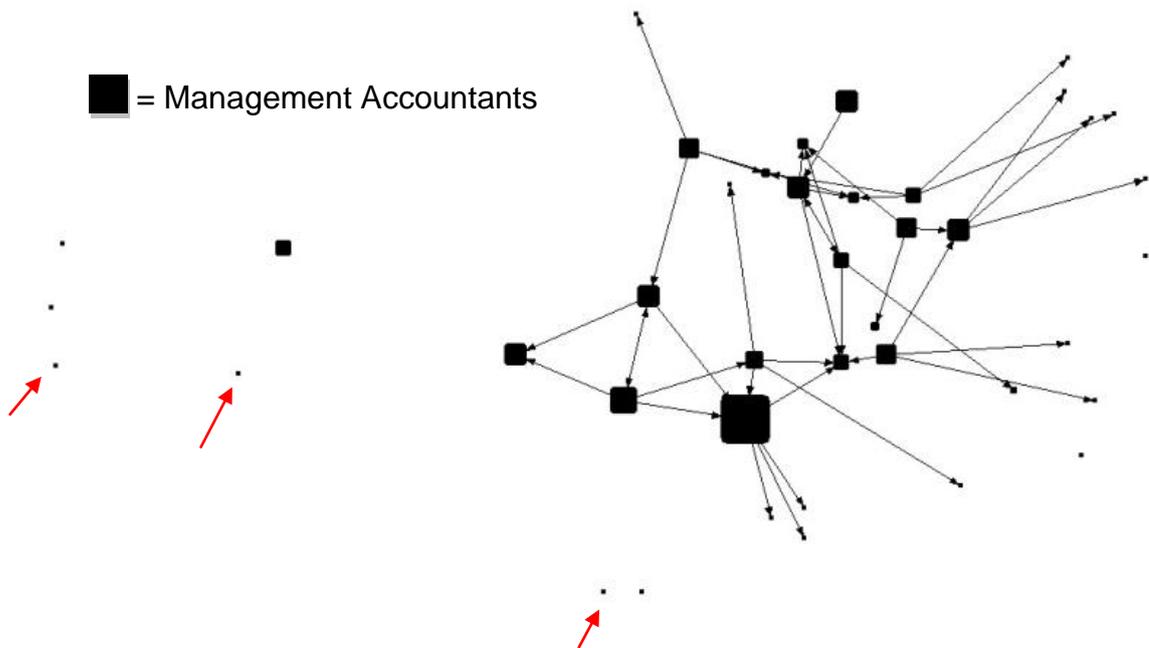
Figure 5.5 Zimmer Accountant Network

The executives and line managers, however show a rather lose network illustrated in Figure 5.6. where two main groups are not connected to each other. Many individuals appear isolated from these two groups and indicate a missing connection to the two main network.

This shows that in Zimmer GmbH the management accountants occupy important bridge functions to facilitate communication and help to manage the organisation.
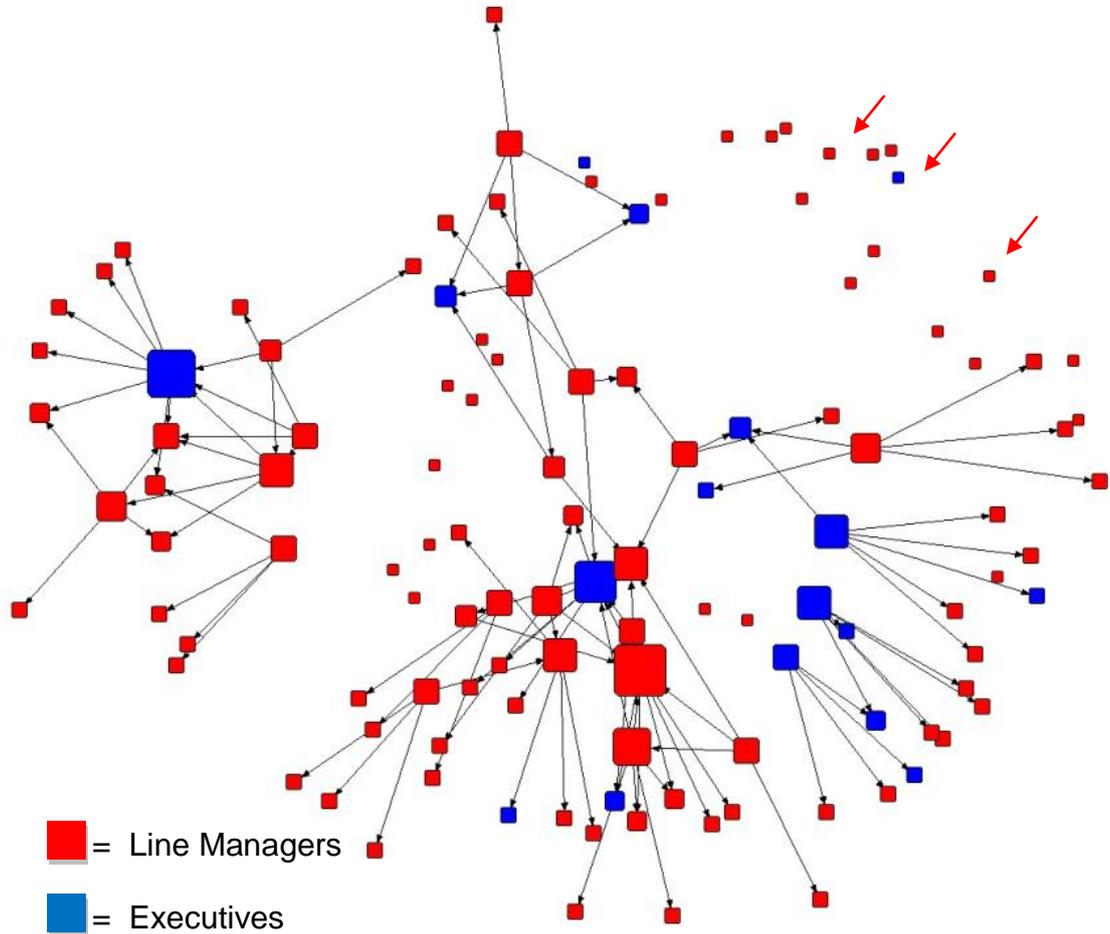
Figure 5.6 Line Manager and Executive network

The results of the social network analysis are outlined in Table 5.19 by group and variables. The summary network statistics to measure centrality and power are now computed and displayed in Table 5.19.

Table 5.19 Average of Social Network variables from the sample from Social Network analysis

Question	V1	Line Manager	Executive	Management Accountant	Total
Frequency of general contact	Outdegree	19.000	32.400	32.167	25.081
	Indegree	3.300	7.600	8.417	5.541
	BPower	19.000	32.400	32.167	25.081
	FBetweeness	20.804	44.100	83.118	44.162
	Infarness	24870.450	24179.200	24089.417	24523.730
	Outfarness	20529.950	21665.200	19947.583	20494.487
	Incloseness	.636	.656	.657	.645
	Outcloseness	.782	.733	.814	.786
Frequency of contact for social enjoyment	Outdegree	8.800	13.000	15.917	11.676
	Indegree	1.300	2.000	5.167	2.649
	BPower	8.800	13.000	15.917	11.676
	FBetweeness	20.804	44.100	83.118	44.162
	Infarness	24870.450	24179.200	24089.417	24523.730
	Outfarness	20529.950	21665.200	19947.583	20494.487
	Incloseness	.636	.656	.657	.645
	Outcloseness	.782	.733	.814	.786
Frequency of contact for career guidance	Outdegree	8.000	11.200	10.417	9.216
	Indegree	1.200	2.400	3.250	2.027
	BPower	8.000	11.200	10.417	9.216
	FBetweeness	20.804	44.100	83.118	44.162
	Infarness	24870.450	24179.200	24089.417	24523.730
	Outfarness	20529.950	21665.200	19947.583	20494.487
	Incloseness	.637	.656	.657	.645
	Outcloseness	.782	.733	.814	.786

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Johannes K. Muehl   26.09.13

Frequency of contact for getting a task done					
	Outdegree	15.350	30.400	26.167	20.892
	Indegree	2.850	6.000	7.333	4.730
	BPower	15.350	30.400	26.167	20.892
	FBetweeness	20.804	44.100	83.118	44.162
	Infarness	24870.450	24179.200	24089.417	24523.730
	Outfarness	20529.950	21665.200	19947.583	20494.487
	Incloseness	.636	.656	.657	.645
	Outcloseness	.782	.733	.814	.786

The reason why average executives have stronger ties could also be related to their homogeneous group – there is not much disparity amongst them. Unlike the executives, management accountants show a very large disparity in terms of hierarchy. The reason is likely to be that different organisational ranks from low to very high exist within the management accountant group. This is likely to be normal for every commercial business organisation.

In Table 5.19 management accountants show a higher outdegree centrality than line managers. This indicates that management accountants more often proactively contacting line managers and executives and seeking information, guidance or social enjoyment. Executives score highest on outdegree centrality. They are also contacted more often than line managers but not as much as management accountants.

In this case it could be construed that executives and management accountants are trusted the most because they receive most inbound requests for contact. However, scoring high in indegree centrality could also mean that executives and management accountants do not trust much because they are being controlled by the people who contact them. On the other hand line managers score lowest on outdegree centrality indicating a lower rank in the organisations'

hierarchy often associated with lower trust levels. This is further supported be the Bpower variable where line manager score lowest on all four questions.

Correlations

It is hypothesised that the social network variables reflecting the strength of communication will correlate with the trust factors or vulnerability, benevolence, concern and affect & cognition. These correlations are laid out in Table 5.20.

All Trust factors did not correlate significantly with the social network variables except with the trust factor 'Concerned', which indicates that Trust has an impact on indegree centrality by working as a lubricant.

Table 5.20 Pearson Correlation Trust and Social Network

		Vulnerability	Benevolence	Concern	Affect & Cognition
Outdeg	Pearson Correlation	.095	.077	.124	.048
	Sig. (1-tailed)	.291	.327	.235	.388
Indeg	Pearson Correlation	-.008	.113	.380	.090
	Sig. (1-tailed)	.481	.256	.011	.299
BPower	Pearson Correlation	.095	.077	.124	.048
	Sig. (1-tailed)	.291	.327	.235	.388
Infar	Pearson Correlation	-.123	.112	-.366	-.094
	Sig. (1-tailed)	.237	.257	.014	.290
Outfar	Pearson Correlation	.077	-.292	.020	-.100
	Sig. (1-tailed)	.327	.042	.454	.278
Inclose	Pearson Correlation	.121	-.120	.372	.083
	Sig. (1-tailed)	.241	.244	.013	.312
Outclose	Pearson Correlation	-.046	.293	-.005	.139
	Sig. (1-tailed)	.395	.042	.488	.206
FBetween	Pearson Correlation	.007	-.052	.329	.112
	Sig. (1-tailed)	.483	.381	.025	.255

Green highlights the significant correlations.

This might indicate that individuals who score high on the concerned dimensions also score high on variables of the social network. This might be related to the the similar nature of the question that concerned usually refers to people and such does the social network.

Additionally, Social Network formation can be associated with performance factors such as impact of trust on control and transaction cost reduction. There correlations are significant and are tabulated in Table 5.21.

Table 5.21 Social Network variables and Impact of trust

		Trans_cost1	Control1
		Good relation to Management Accountants provides more access to resources, information and / or funds for your department	**Good relations between Line Managers and Management Accountants help to control your business**
Outdeg	Pearson Correlation	.436[**]	.361[*]
	Sig. (2-tailed)	.007	.028
Indeg	Pearson Correlation	.325[*]	-.047
	Sig. (2-tailed)	.050	.783
BPower	Pearson Correlation	.436[**]	.361[*]
	Sig. (2-tailed)	.007	.028
Infar	Pearson Correlation	-.425[**]	-.103
	Sig. (2-tailed)	.009	.543
Outfar	Pearson Correlation	-.147	-.030
	Sig. (2-tailed)	.386	.862
Inclose	Pearson Correlation	.418[*]	.105
	Sig. (2-tailed)	.010	.537
outclose	Pearson Correlation	.159	.056
	Sig. (2-tailed)	.347	.742
FBetween	Pearson Correlation	.435[**]	.114
	Sig. (2-tailed)	.007	.501

Green highlights the significant correlations.

Management accountants are usually the main basis for decision making as they should have the best most comprehensive picture of a company. Hence,

these relations are very important for a company to operate efficiently and effectively. In Zimmer it appears to be working well. The reachability of Management Accountants is very low and does not require many nodes to reach other nodes. Additionally, the weaker ties are all around the periphery of the network, which appears to be a good sign for the management of the company, which can take advantage of quick and short information flows and fast support of its employees. Management Accountants are important within Zimmer to allocate resources and keep information flow efficiently.

These results confirm that in Zimmer the performance and trust building is not blocked by the social network formation. For the goals of this research it partially confirms that trust and social network formation is related. It also provides strong evidence that social network formation correlates with perception of organisational performance and impact on performance.

5.2.1.2 Zimmer Dental EMEA

Within Zimmer GmbH all business units appear fully integrated except the Dental segment, which is formally not part of EMEA Headquarter structure in Winterthur, Switzerland and has at least some functions in other countries like Carlsbad, California or Freiburg, Germany (Zimmer Germany 2011).

Furthermore, it seems that Zimmer Dental is not fully integrated in the SAP ERP system like other entities (Sieber 2007, Handschin 2010) and instead uses other software applications such as e.g. ERPframe® (Böhm 2011).

As Zimmer Dental is a small business segment in comparison with the other segments (Zimmer Holdings 2010) the reason why they are not integrated fully might be the intention of Zimmer's Management to grant the Dental segment more flexibility, enable them to grow faster without corporate constraints and perhaps to acquire other companies more easily – however no supporting evidence can be found in the literature.

The results of the social network analysis revealed that ties between Zimmer Dental and the other business segments appear to be very weak. There is only one weak tie between one Dental manager and the other segment managers and one strong tie to one management accountant from the other segments.

This indicates that the Dental organisation might not collarborate with the other business segments. It perhaps uses completely different formal organisational structures or formal reporting lines.

The following figure visualises the Zimmer Dental network and connections to the rest of organisation's business segments. Everything included in the frame shows individuals from the dental segment. The names of all individuals are anonymsed using "Star Trek" characters.
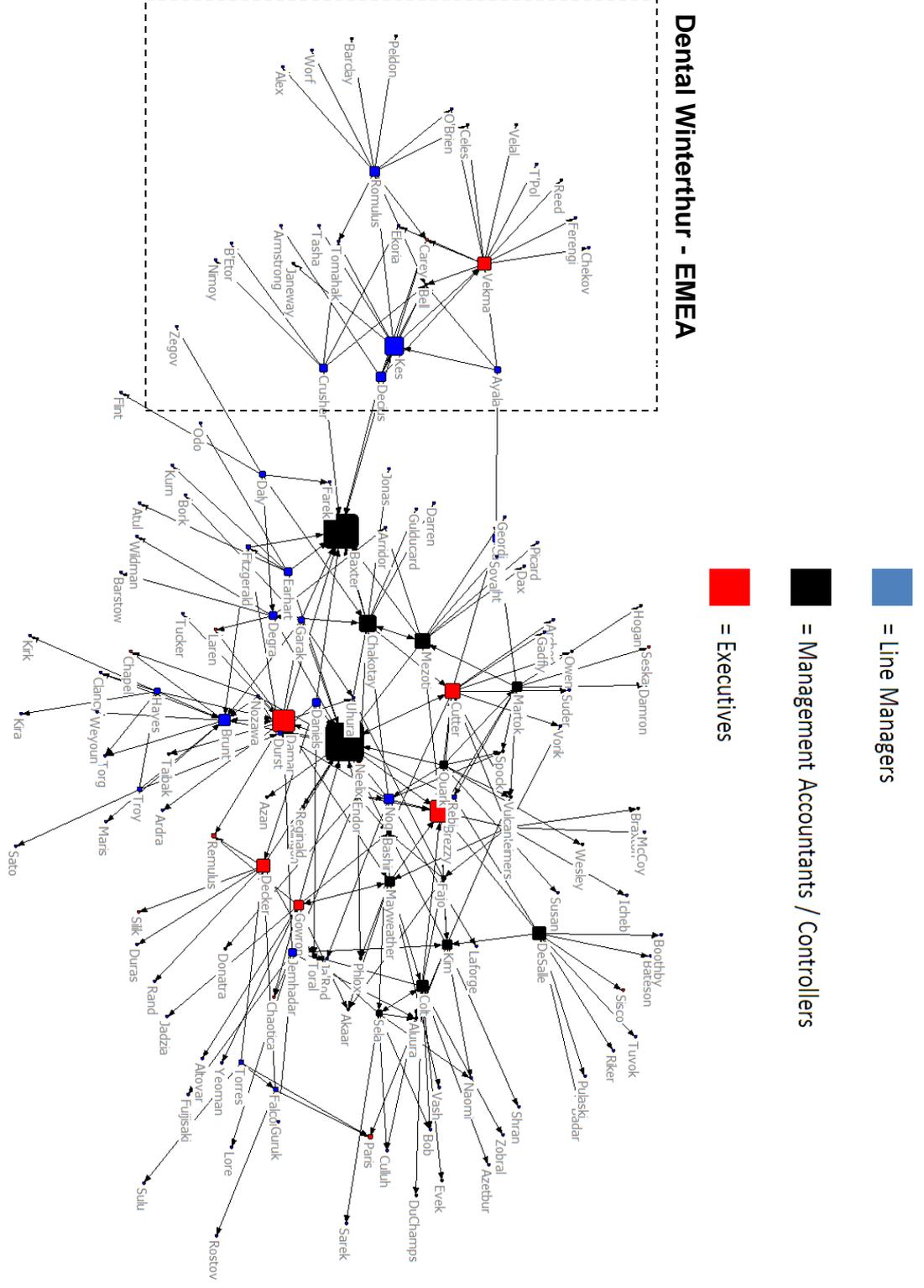
Figure 5.7 Sociogram of Zimmer GmbH and Dental EMEA

This structural hole illustrated in Figure 5.7 showing a gap in the sociogram devoid of links and little contact between individuals could be caused by e.g. different legal entity structures, different types of organisation as well as different bonus schemes of Zimmer Dental and the other segments. There are no indicators that the line managers / executives from Zimmer Dental in this questionnaire are viewed as unreliable or untrustworthy by the other segment line managers / executives. Zimmer Dental managers also show no indication of distrusting their counterparts in the other business segments.

One management accountant - 'Baxter' could be identified who functions as the main broker between the Dental- and the other segment line manager / executives and other Management Accountants. This Management Accountant shows a high degree of connectedness and betweeness.

This 'bridge' appears to be powerful trusted position and could be caused by special social or technical abilities this management accountant has or by organisational defined structures. The trust levels showed high values in regard to this person's trustworthiness / reliability leading to the conclusion that he or she is simply liked by the other members of the network.

Zimmer Dental and the other segment's leaders could benefit from each other by communicating more and sharing each others' best practices. It would also help Zimmer Dental to generate more leverage and gain more support by changing its organisational structure or become more integrated. This however has to be aligned with the business model of both entities.

5.2.2 Interview summary Social Network impact from Zimmer GmbH

In this section the Research Hypothesis that social networks have an effect on trust and performance is investigated in interviews with management accountants who mostly also participated in the questionnaire part. As the quantitative results from the impact of social network analysis only partially support the research hypothesis H[1SNA] and H[2SNA], a series of interviews were held with management accountants.

The interview style was chosen wherever possible to safeguard correct interpretation of the question. It guaranteed faster response times and it did make things less vulnerable for participants.

The interviews were conducted informally within the year 2012/2013 by approaching the individuals directly in a confidential environment.

The main question asked was:

> "Generally speaking would you agree that strong social networks are important for you to be able to do a good job as a Management Accountant?"

Because of interpretation difficulties the question was explained to the participants when clarity was requested. The interviewer also asked questions proactively to make sure the interviewees understood the meaning of the question as well as possible.

In this interview approach, mostly the management accountants who had participated in the original questionnaire were interviewed. Detail of interviews can be found in the appendices.

Six out of eight interviewees thought that a strong social network gave them access to information they would otherwise not receive if they were on their own. They concluded that the quality and the result of their work is improved due to better information.

For another one the social network was a motivating factor in work and increased happiness. This participant (Mezoti – the real name is anonymised here) stated that "I gain a positive mood when I interact with my colleagues. It clearly influences my workstyle and my motivation." Another participant made a similar statements. Similar statements were made by others who were interviewed. There was no one who argued against this point of view with the exception of one participant who argued that social networks are not always only positive. A research hypothesis could be formed that social networks increase happiness and motivation. The same participant stated that: "Networks sometimes help people to move up the internal hierarchy quicker than others. But this is not always best for the organisation." This statement reveals that there is a different opinion, which disagrees with the research hypothesis that strong social networks increase trust levels and performance unconditionally. However, the same interviewee also mentioned that "usually social networks are the key to getting work done and getting to know people who can support me in my work." Therefore, it could be construed that social networks have at least a two way effect on trust and performance.

Most interviewees viewed social networks as a lubricant for increased performance but others also made similar statements to those above, where social networks are mitigating performance in certain cases. Some dispute the effect of social network on performance and mention that "even without a network I would still do my work anyway, so I am not sure whether company performance is strongly affected directly, there are so many other factors, but it makes things easier." Others share similar viewpoints. As the performance dimension is influenced by numerous other variables, e.g. market conditions, competition, recession or boom times etc. it seems appropriate to shed more light on the relation of social network with the successful business relation

dimension, which portrays more the internal side of success within the organisation in this research.

The research hypothesis H[1SNA] and H[2SNA] that social network correlates positively with performance is partially supported.

There was no interviewee who reported a high degree of tension involved in social relations with line managers and executives. There was only one interviewee who mentioned that the global headquarters appears to be powerful in influencing group-formation – however, this does not mean there must be organisational tensions. But it would be an interesting investigation for further study.

All management accountants participating these interviews showed propensity to trust.

5.3 Simplification of Trust Dimensions

The purpose of this section is to try to simplify the dimensions which were constructed in the beginning of the chapter. There is a need to do this to allow a simplified questionnaire to be used in the other studies and given the low sample size allow path modelling to be used to model performance.

The way how this was done was using Pearson correlation as well as Principal Component Analysis. Both Pearson correlations as well as Principal Component Analysis have been conducted for all the sections below. However, only the significant results from either method, which deemed to have the most influence on justifying the simplifications were chosen.

5.3.1 Simplified Trust Measure

In order to develop a simplified trust measure, which would be easier to apply in future research and other potential studies, the correlation between the trust questions were re-examined, see the following Table 5.22.

Table 5.22 Pearson correlation Trust Dimensions

Correlations		Concerned1	Reliability1	Vulnerability1	Benevolence1	Competence	Reliability2	Benovelence2	Vulnerability2
Concerned1	Pearson Correlation	1	,280	,212	,290	,059	-,063	,109	-,018
	Sig. (2-tailed)		,098	,215	,086	,733	,714	,528	,918
	N	36	36	36	36	36	36	36	36
Reliability1	Pearson Correlation		1	,566	,575	,673	,355	,236	-,230
	Sig. (2-tailed)			,000	,000	,000	,031	,160	,171
	N		37	37	37	37	37	37	37
Vulnerability1	Pearson Correlation			1	,515	,645	,582	,225	-,602
	Sig. (2-tailed)				,001	,000	,000	,181	,000
	N			37	37	37	37	37	37
Benevolence1	Pearson Correlation				1	,439	,621	,182	-,141
	Sig. (2-tailed)					,007	,000	,280	,404
	N				37	37	37	37	37
Competence	Pearson Correlation					1	,442	,106	-,460
	Sig. (2-tailed)						,006	,531	,004
	N					37	37	37	37
Reliability2	Pearson Correlation						1	,365	-,302
	Sig. (2-tailed)							,026	,069
	N						37	37	37
Benovelence2	Pearson Correlation							1	-,047
	Sig. (2-tailed)								,781
	N							37	37
Vulnerability2	Pearson Correlation								1
	Sig. (2-tailed)								
	N								37

Concerned1 does not correlate much with other dimensions. Reliability correlates strongly with vulnerability1, benevolence1 but not as strong with vulnerability2. Vulnerability1 correlates strongly with vulnerability2, which was to be expected but also with most other variables with the exception of Benevolence2.

Three dimensions (questions) were used: 'concerned', which was not correlated with any other dimension and is independent, 'honest / open / vulnerability' and benevolence, which showed the least correlations and were representatives of different pairs. Competence may also be a possible measure because it strongly correlates with other dimensions and was not considered in this first study. A summary of these dimensions and questions is presented in Table 5.23.

Table 5.23 Simplified trust measure

	Trust Scale	Trust Dimension
1	My needs and desires in my job are very important to (Management Accountants/Line Managers)	Concerned
2	(Management Accountants/Line Managers) are open and up front with me.	honest / open / vulnerability
3	If I make a mistake the Management Accountants are willing to 'forgive and forget.'	Benevolence2

5.3.1.1 Propensity to trust

In Table 5.15 new dimensions are created for the questions shown in the Table in the conceptual model section. Factor analysis using varimax rotation resolved these questions into two new variables which have been labelled 'sharing' and 'control' which accounted for 59.36% of the variation.

Table 5.24 Propensity to trust Rotated component matrixa

	Component	
	Sharing	Control
My colleagues in general share important company information with me	0.880	
My colleagues in general share important personal information with me	0.876	
To bring control to a company independent people are important		
Clear descriptions and written documents (including emails) are better for the success of the business than more informal ways of communication		0.782
Strict control is better than being dependent informally on others in the company for the success of the business.		0.765
Bringing control to a company can be achieved by hiring competent and reliable people	0.384	0.718
Amount of variance explained	30.24%	21.13%

Propensity to trust involved two factors - sharing information and formal control which were generated from a reduction of four questions. The two questions shown in the table below were taken as representative of the factor dimensions.

Table 5.25 Propensity to trust reduced questions

		Model
1	Clear descriptions and written documents (including emails) are better for the success of the business than more informal ways of communication	Control vs. Trust/Dependence High vs. low truster
2	My colleagues in general share important company information with me	Trustworthiness

5.3.1.2 Tensions

Similarly as in Table 5.12, new dimensions were created for tension - these were labelled 'internal', 'cultural' and 'personal' which accounted for 67.11% of the variation In the questions and representative question chosen in the previous section are displayed below in Table 5.26.

Table 5.26 Tensions reduced questions

	Organisational tension scale	Forms of trust	Research Hypothesis
1	Organisational tensions between Management Accountants and Line Managers are strong.	Institution based / Process-based	H[1T]
2	Management Accountants / Line Managers lack of business understanding.	Institution based / Process-based	H[2T]2
3	I would go on a sporting or social outing privately with Line Manager(s) / Management Accountant(s) in my free time	Characteristic-based	H[3T]

5.3.1.3 Cognitive- and affective-based trust

For cognitive- and affective-based trust, two questions were chosen are illustrated in the Table 5.27 to represent the affective- and cognitive-based trust dimension.

Table 5.27 Cognitive- and affective-based trust reduced questions

		Model
1	(Management Accountants / Line Managers) are encouraging you and checking on your progress	Affective-based trust
2	Referring to a specialist when needed; readily admitting if he/she doesn't know something	Cognitive-based trust

5.3.1.4 Characteristics and other factors

The effects of native language, years of experience and gender on trust were investigated. No significant differences were found in the sample.

Only gender revealed that women might be less trusting than males, however this is statistically insignificant and likely to be falsified by the limited sample size. So none of these will be used in the simplified questionnaire.

5.3.1.5 Game theory

Statistically there is no significant difference between the different strategies chosen by all samples (see Figure 5.8).

However, from a qualitative point of view it appears that executives tend to be more likely to be committed (Game theory 1) than the other two samples. Management Accountants tend to look to keep the books balanced (Game theory strategy 2). However, because of the small sample size these findings are not reliable.
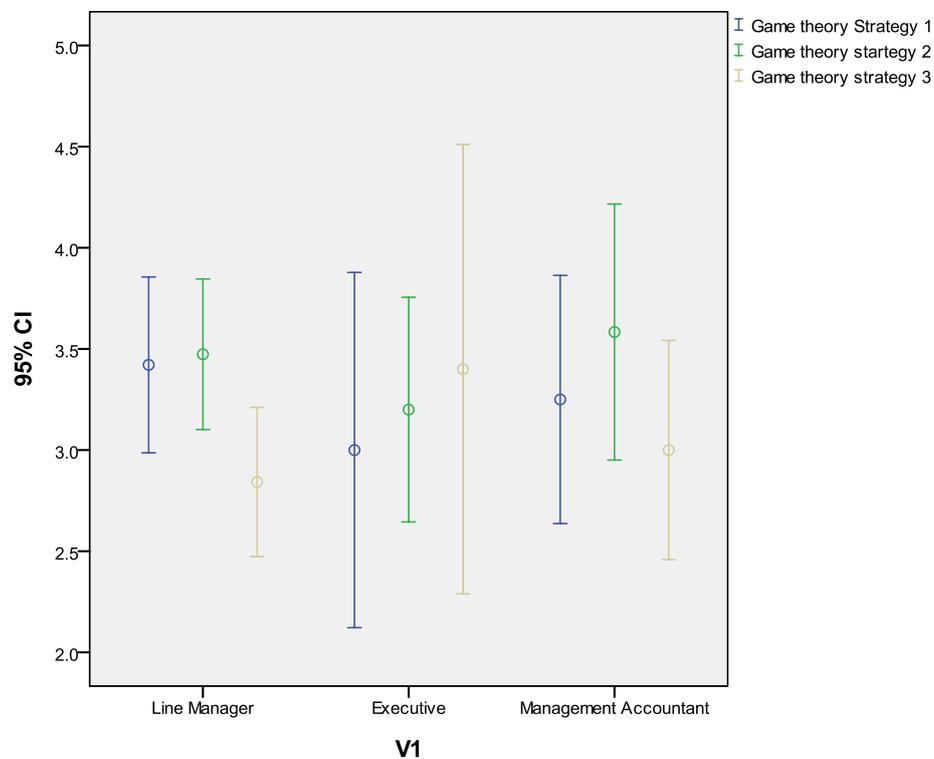
Figure 5.8 Game theory strategy

5.4   Summary of Investigative Study in Zimmer GmbH

The study conducted in Zimmer GmbH was easy to be conducted due to the agreement of management and the high participation of employees. This led to a response rate of >27%.

The findings partially support the research hypothesis. Some of the questions which were checked for correlations did not reveal statistically significant relationships.

Questions related to trust dimensions and dimensions focusing on affective- and cognitive-based trust correlated strongly with each other. This supports the validity and reliability of the defined dimensions. The trust measure was validated. It appears to capture trust successfully in private organisations. The success of business relations can be partially associated with the degree of benevolence between employees. The benevolence dimension was also found to be strongly correlated with the level of to what degree employees preferred formal control and were willing to share information with each other.

This study also revealed that there is a slight support that trust impacts transaction cost positively and that trust decreases operating expenses and increases efficiency in worklife. There are few significant relationships between tensions, performance, trust and successful business relationships. However, similarly the relationship between performance and trust there might be a phasing issue involved.

The impact of closeness and betweenness in the social network and trust and successful business relationships revealed no significance in the questionnaire. However, the interviews held additionally provided some insight from a management accountant perspective about the impacts of social networks on successfully doing business, making collaboration easier and possible. The research hypothesis that social networks have an impact on successful business relationships was partially supported.

Chapter 6

6   Furtwangen University - Investigative study

In this chapter trust relations in a public organisation is explored. As with private organisations getting coorperation was difficult and finally a German higher education institute agreed to participate. But it was soon found that the previous questionnaire used in Zimmer GmbH was too complex and the simplified one that was developed in the last chapter was used. This study is now reported on starting with the administration of the survey, then summarising the findings and testing the set of research hypotheses that were laid out in Chapter 3 and 4. The chapter ends with a comparison of the two studies. The university used in this case was Furtwangen located in the South West of Germany close to Switzerland.

6.1   Furtwangen University

The Furtwangen University was founded in 1850 by a German engineer Robert Gerwig. Today, the University is located in three different cities - Schwenningen, Tuttlingen and Furtwangen. It consists of eight faculties with roughly 4160 enrolled students (Furtwangen 2010). In 2011 the university offered 38 accredited study programs (Furtwangen 2011).

Due to the increasing number of students in recent years, the University of Furtwangen established new faculties such as the Business School and the Medical Engineering faculties in Schwenningen, Germany. The IT (Information Technology) and Technical Engineering faculties remained in Furtwangen.

In order to meet growing demands of higher education mainly from the medical device and machine manufacturing industry in the area around the city of Tuttlingen (Furtwangen 2011, Wolf 2009) a new campus was established in

Tuttlingen. This was a joint effort with the city of Tuttlingen and more than a 100 commercial companies (Oettinger 2009).

Furtwangen University was ranked to be amongst the best universities in Germany several times (CHE 2010). It is seen as a leading university in the south-west of Germany (Furtwangen 2011) and has numerous partner universities worldwide.

6.2   Modification of Questionnaire

The structure and the environment of business companies is different to public organisations. Therefore, the questionnaire used in Zimmer GmbH had to be adjusted to take into account the different terminologies of the three different populations and other factors.

The populations had to be identified to be in line as close as possible with what is seen as line managers, accountants and executives.

Consultations were made with several Professors and Deans from Furtwangen and led to the following definitions of the populations:

- Line managers are professors without budget responsibility.

- Management accountants are deans who maintain budgets for research projects and faculties, manage pay-programs such as executive programs, eMBAs and Masters in Furtwangen University.

- Executives in the form of representatives of shareholders are the decision making civil servants of the government department, who are supposed to represent the taxpayers interests. The executive group was not considered in this research as the executives are geographically too far away and thus appear too detached from the Professors and Deans groups. Personal contact is likely limited and formalised. Contact is mainly for administrative control, payroll and investment and

maintenance decisions. Unlike in private business organisations where the board of directors and executives represent the owner's interests there is physically no representative of taxpayers in the university.

Additionally, based on the simplification of the questionnaire several questions were eliminated to reduce the time needed for participating in this questionnaire.

The questions removed related to characteristics such as gender, age, marital status, languages. This was deemed not to be a serious loss as no significant differences in these variables were found in the Zimmer study.

These questions were perceived to be unacceptable by the participants. The reasons are mainly cultural differences and a pronounced desire of Professors in Furtwangen for data secrecy and anominity. From intwerfviews it was revealed that many Professors think that academia should be above political courses and ideolgies and should be able to freely challenge without fearing consequences. (In Germany there is an obsession with data confidentiality some of this eminates from the historic abuse of personal data in Germany during the Second World War and only recently until 1990 by the Stasi (Ministry of State Security) in the German Democratic Republic, data confidentiality is perceived to be very important by many individuals. Hence, participants are careful to provide information about their personal identity and they prefer that science remains pure and less vulnerable). Therefore, several questions were cancelled to decrease the risk of a low response rate in this study.

The social network analysis section had to be greately simplified and anonymised. In Zimmer GmbH the five questions used to identify the structure of the social networks exposed networks with different densities yet showed similar in pattern. Hence, it seemed sufficient to use the question associated with the highest network density.

A change of naming conventions was needed to take into account the different titles but yet still reflect similar functions of employees in public organisations. In

case of Furtwangen University the 'Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg' (Government Department for Science, Research and Art Baden-Württemberg) controls the payroll of all staff directly as well as most of the research and operational budgets. Hence, it can be construed that the Management Accounting in Furtwangen itself is less complex than in Zimmer GmbH as most budget decisions are made centrally in the government department. However, if one considers the government and local control and their interactions then the complexity of control emerges as similar to Zimmer. This complexity of combined government and local control meant that there was no equivelent to the executive level that was used in Zimmer.

The administration of Furtwangen University (rectorate and deans) has sole financial control over research projects within departments and faculties, the financial control over pay-programs such as executive programs, eMBAs and Masters, in-house projects, funds from donations. In addition they partially manage funds from industry for several projects. Additionally, "they manage 60% of the enrolment/study fees of students and this is mainly invested in improving study conditions, support functions and student excursions, in enhancing labatories, and libraries in particular electronic media" (Furtwangen 2010, page 5). Acccordingly, the rectorate and deans have a similar function to the management accountants in Zimmer.

In this research only the relationships between professors (who represent the line managers) and deans (management accountants) are considered.
However, for professors research funds and resources in the form of labour support across areas of responsibility are impacted by the decisions from deans and the rectorate in Furtwangen can probably influence at least some decisions in the government department by, for example, building relations with the relevant politicians and decision makers or by performing better in university rankings than other schools, which Furtwangen successfully does. But this interaction was not explored as no access was given to the government department.

As a public organisation the Finance and management information systems of Furtwangen University are structured differently than those of private business organisations and this led to further changes in the data collection instrument. Though the structure of the questionnaire remains the same overall, removing questions and changing the naming conventions could create different results compared to the first study with Zimmer GmbH. However, Eisenhardt (1989, page 539) pointed out that for:

> "theory building research, it can be legitimate to alter the questionnaire to understand each case individually and in more depth. The goal is not to produce summary statistics about a set of observations. Thus, if a new data collection opportunity arises or if a new line of thinking emerges during the research, it makes sense to take advanatage by altering data collection, if such an alteration is likely to better ground the theory or to provide new theoretical insight."

The questionnaire was provided in German and English.

6.2.1 Pilot Study of Questionnaire

The questionnaire had been sucessfully tested and applied in Zimmer GmbH already. It was only adapted by slightly changing the naming conventions. For this study it was considered necessary to test at least the German questionnaire again in a similar environment.

Hence, the questionnaire was tested with employees and stakeholders of a small family owned company Concepte-Muehl [www.concepte-muehl.de. November 2012] which operates in the education business and works together with universities, professional education associations, private companies, the German Industrial Chamber of Commerce (IHK – Industrie und Handelskammer) and many others (Muehl and Alber 2012).

Several language changes and adjustments had to be made to tailor the questionnaire to the needs of the education environment and public organisations.

Additionally, a technical problem with regard to the firewall and system settings in Furtwangen had to be resolved in collaboration with the Survey-Monkey helpdesk and the IT service of Furtwangen (Rechenzentrum). The survey settings remained the same as with the Zimmer GmbH study.

6.3 Testing of research hypothesis generated from the conceptual models

The questionnaire was sent out to 140 individuals and received a total response rate of 26.43%. Six deans out of eight participated in the questionnaire. Amongst the professors 31 of 132 participated in the questionnaire. In total 37 valid Questionnaires were received of a size of 140.

The questionnaire was provided in the form of an internet link (surveymonkey) and was distributed through a group email by the rectorate assistant in the German and English languages. Time given to participants for completition was roughly four weeks – same as Zimmer GmbH. The final questionnaire is displayed in the Appendice.

Trust Dimensions

In the Furtwangen case the simplified measures of the trust dimensions were used and so were not precisely the same as considered for Zimmer GmbH.

The trust dimensions of concern, competence and vulnerability as illustrated in Table 6.1 linked well with each other and were formed into one principal component which accounted for almost 69% of the variability across these

dimensions. The correlations between them were all significant with Pearson correlation coefficients between iconcern and competency of 0.374, between convern and vulnerability of 0.702 and between comptence and vulnerability of 0.510, the respective P values were; 0.021, <0.001 and 0.001. This corroberates and is in agreement with principal components already selected in the first study in Zimmer GmbH.

Table 6.1 Trust principal components in Furtwangen University

| Dimensions | Questions | Component |
		1
Concerned	Needs and desires of Professors are very important to Deans.	.849
Competence	Deans have a lot of knowledge about their work area.	.728
Vulnerability	Deans are open and up front.	.905

In the Furtwangen study the Benevolence dimension was not considered because Benevolence was deemed to be of less importance in a public organisation. As a public organisation by nature is supposed to not seek profit, it shows a higher degree of benevolence than can be assumed for private business organisations. The notion of benevolence or culture of benevolence in public organisations is deemed to be higher than in private organisations. This partially also follows Viklund's conclusion that trust could not be measured in public organisations in the same way as in private organisations (Viklund 2002).

Therefore, the benevolence dimension was replaced by the competence dimension to fit as a principal component in this study and give special consideration to the nature of public organisation.

The component illustrated in Table 6.1 were selected to be formed into an overall trust factor and will be used in regressions used to confirm research hypothesis on trust relationships later in this chapter.

Tensions

In Table 6.2 the questions relating to tensions are displayed. There was a strong postive correlation between internal and cultural tensions (P value 0.002) but personal did not correlate well with the other tensions and the tendency was to form a negative correlation. One principal component was formed which only explained around 51% or the original variation. Classification of tensions were considered similarly to the Zimmer study.

Table 6.2 Tensions principal components in Furtwangen University

Research Hypothesis / Factor	Questions	Component
		1
H[1T] / Internal	Organisational tensions between Deans and Professors are strong.	.833
H[2T] / Cultural	Deans lack of understanding of my work and research area.	.871
H[3T] / Personal	I would go on a sporting or social outing privately with Deans in my free time.	-.271

In order to test the research hypothesis: H[4I] *The level of trust between Management Accounting, and Line Managers impacts opportunistic behaviour* and H[5I] *The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations*, tension is correlated with performance and trust. The correlations and their P values are displayed in Table 6.3. This confirms that tensions have a significant negative impact on the trust levels in Furtwangen University and the null research hypothesis can be rejected (Pearson correlation coefficent -.541 with P value .001), which supports Research Hypothesis [4T] from the tension model. This is further supported by

the correlations of affective- and cognitive-based trust with tensions, which show similar results adding more reliability to the result.

As for the impact of tension levels on performance the research hypothesis H[5T] cannot be fully verified as the relation is not significant with performance and sustainability. However, tensions correlate significantly with successful business relationships, which is also a partial performance indicator (Pearson correlation coefficient -.489, P value .003).

Hence, this provides support that organisational, departmental and personal tensions make fostering trust levels between people difficult if not impossible. The relation between tensions and performance can partially be proven. Like in the Zimmer GmbH study the success in business relations correlates as expected with tensions.

Table 6.3 Tension Research Hypothesis testing

Dimension		Trust factor	Affective-based Trust	Cognitive-based Trust	Perform-ance	Successful business Relation-ships	Sustain-Ability
Question		See Questions in the Trust principal components part	Deans are encouraging you and providing support if needed.	Referring to a specialist when needed; readily admitting if he/she doesn't know something.	Given the competition with other universities would you consider the university to be successful (e.g. university rankings, employability of their graduates on the job market)?	Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	Do you enjoy working for the university?
Tension factor	Pearson correlation	-.541	-.406	-.499	-.156	-.489	.195
	P value	.001	.014	.002	.377	.003	.254

Considering now research hypothesis 1T, 2T and 3T:

H[1T] = Internal conflict of interest leads to tensions between Line Management and Management Accountants.

H[2T] = Organisational culture differences leads to tensions between Line Management and Management Accountants.

H[3T] = Lack of personal trust between individuals leads to tensions between Line Management and Management Accountants.

Tensions were seperated into personal, cultural and organisational tensions and correlated with the trust diminsion: Table 6.4 shows the correlations between

tension dimensions and trust. Hence, research hypotheses 1T and 2T are signficantly correlated while research hypothesis 3 can partially supported.

Table 6.4 Tension classification – Research Hypothesis testing

Dimension		H[1T] / Internal Tensions	H[2T] / Cultural Tensions	H[3T] / Personal Tensions
Question		Organisational tensions between Deans and Professors are strong.	Deans lack of understanding of my work and research area.	I would go on a sporting or social outing privately with Deans in my free time.
Trust Factor	Pearson correlation	-0.434	-0.501	0.353
	P Value	0.008	0.002	0.035

Impact of Trust

As for the impact of the trust variable two questions were asked and these were resolved in to a principal component. The component explained almot 59% of the original variablity in the two questions. The impact of trust component is illustrated in Table 6.5 This adds more reliability and validity to the impact of trust components.

Table 6.5 Impact of trust Principal Components in Furtwangen University

Dimension	[H]	Questions	Component
			1
Transaction cost: Social Capital	H[1I] H[2I] H[3I]	Good relation to your Deans provides more access to resources, information and / or funds for your department or research area.	.768
Trust and Control	H[3I] H[4I] H[5I]	Good relations between Professors and Deans help to control your administration.	.768

The following research hypotheses in relation to impact of trust are now tested for statistical significance:

H[1I] = The level of trust between Management Accounting and line managers impacts transaction costs.

H[2I] = The level of transaction costs impacts the efficiency and effectiveness in organisations.

H[3I] = The level of trust directly influences the performance within an organisation.

H[4I] = The level of trust between Management Accounting and line managers impacts opportunistic behaviour.

H[5I] = The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.

In Table 6.6 the impact of the trust component is correlated with performance is displayed. The relationship is found to be significant with Pearson correlation coefficent of .419 and a P value of .014. This supports Research Hypothesis [3I] that *the level of trust directly influences the performance within an organisation.*

Additionally trust is seen to be partially associated with decreasing transaction cost. Though the relation is not significant it shows a slight tendency in the direction of the research hypothesis and hence partially supports research Hypothesis [1I] *The level of trust between Management Accounting and Line Managers impacts transaction costs.*

For Research Hypothesis [2I] *The level of transaction costs impacts the efficiency and effectiveness in organisations* the relation cannot be supported but similarly shows a slight tendency and thus Research Hypothesis [2] is partially supported.

Research Hypothesis [5I] *The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations* was tested by looking at the preference of individuals on increased formal control and perception of performance. However, the analysis showed that the relations between performance or impact on performance and preference for increased formal control were insignificant and could not be proven in this study.

Research Hypothesis [4I] - that increased trust decreases opportunistic behaviour was tested by correlating the trust component and the preference on formal control. The relationship is not significant but is pointing in the anticipated direction. An additional Table 6.7 also identified that there are no significant relations between formal control and affective based trust. However, cognitive-based trust did correlate with formal control and in this case the null hypothesis can be rejected (Pearson correlation coefficient .332 with a P value of .048).

Table 6.6 Correlations Trust vs. Impact of Trust vs. Performance

Dimension		Impact factor	Performance	Formal Control
Question			Given the competition with other universities would you consider the university to be successful (e.g. university rankings, employability of their graduates on the job market)?	Clear descriptions and written documents (including emails) are better for the success of the university than more informal ways of communication.
Trust factor	Pearson correlation	.237	.419	-.163
	P value	.158	.014	.341
Impact factor	Pearson correlation		.155	.277
	P value		.374	.097
Formal Control	Pearson correlation	.277	-.128	
	P value	.097	.464	

The question of how much formal control is seen to be required in organisations does not significantly correlated with the trust dimension and also not with affective-based trust. However cognitive-based trust correlates positively with formal control, which does not prove the research hypothesis as the sign was expected to be negative. The correlations are displayed in Table 6.7

Table 6.7 Trust level impact on opportunistic behaviour

Dimension		Trust factor	Affective based Trust	Cognitive based Trust
Question			Deans are encouraging you and providing support if needed.	Referring to a specialist when needed; readily admitting if he/she doesn't know something.
Formal Control	Pearson correlation	-.163	.117	.332
	P value	.341	.496	.048

Correlations

How all main factors correlate with each other is displayed in Table 6.8. The correlations in Table 6.8 show that trust correlates signficantly positively with perception of performance (Pearson correlation coeffcient .419 with P value .014) but not with impact on Trust (Pearson correlation coeffcient .237 with P value .158). This differs from the Zimmer GmbH study where performance did not correlate well with levels of trust, but this was most likely due to a time phasing problem. This proves Research Hypothesis [3I] that trust levels impact performance directly. However, Research Hypothesis [1I], [2I], [4I] and [5I] that trust impacts control and transaction costs variables positively thereby increasing efficiency and effectiveness leading to higher organisational performance could not be supported even though the the signage partially showed the expected direction.

The impact of trust on performance correlates partially postively with formal control at (Pearson correlation coefficent .277 with P value .097), which is insignficant but shows a positive tendency.

This indicates that by implementing formal control instead of trust (or also in interaction with fostering a corporate culture of trust) a positive influence on the impact variables can be observed.

This supports the research hypotheses that formal control and trust can both influence as substitutes or in interaction the impact of several variables on performance. However, formal control in Furtwangen University does not correlate with performance directly and in fact shows a slightly negative relationship, which is however insignificant.

Hence, it could be construed that formal control has an influence on the variables affecting performance. However, formal control has not gotten a positive relationship with performance. The relationship seems twofold and / or other factors might also impact this. However, the sample size is too small to give confidence to conclusions.

Amount of contacts is an indicator for perception of higher organisational performance (Pearson correlation coefficent .391 with P value .022) for contacts with deans and (Pearson correlation coefficent .312 with P value .068) for contacts with professors showing the social network has an impact on perception of performance of Furtwangen university. The research hypothesis that stronger ties in social network formation impacts performance positively can be verified in terms of contacts with Deans but not completely with contacts with Professors though the tendency is positive. However, this could be falsified through the group, which decided not to respond in this questionnaire. They might likely have an impact, which might distort the current results. Amount of contacts cannot be associated with trust, there is only a light tendency that more contact creates more trust and vice versa.

The general trust question as used in the European Quality of Life Survey to determine sustainability appears not to correlate very well with neither cognitive- / affective-based trust nor with the trust measure developed in this research. It

also does not correlate with the amount of contacts in the organisation. The social network has no impact on the general trust question. Hence, it could be construed that the general trust question appears not to capture the trust construct in the case of Furtwangen University sufficiently and is, as expected, a proxy for a successful business relationship. Additionally, it appears that trust does not support successful business relationship building in Furtwangen University or is reduced by other factors not discussed in this research.

Cognitive- and affective-based trust correlate strongly with each other (Pearson correlation coefficent .569 with P value .000) and also to the other trust variable, comprising the trust dimensions identified for this case.

Enjoyment of working in Furtwangen university, which is seen as the success in business relation variable correlates positively with performance (Pearson correlation coefficent .510 with P value .002).

Table 6.8 Pearson Correlations Furtwangen University

Pearson Correlations

		Trust	Tension	Impact	Contact with # Deans -	Contact # Professors -	Affective based trust	Enjoy working	Can trust people	Performance	Cognitive based trust	Formal Control
Trust	Pearson Correlations	1	-.541	.237	.176	.162	.644	.446	-.303	.419	.359	-.163
	Significance (2-tailed)		.001	.158	.298	.331	.000	.007	.072	.014	.029	.341
	N	38	36	37	37	38	37	35	36	34	37	36
Tension	Pearson Correlations		1	-.021	-.022	-.104	-.406	-.489	.195	-.156	-.499	.006
	Significance (2-tailed)			.905	.902	.548	.014	.003	.254	.377	.002	.971
	N		36	36	35	36	36	35	36	34	36	36
Impact	Pearson Correlations			1	-.040	.271	.370	.313	-.036	.155	.195	.277
	Significance (2-tailed)				.816	.100	.024	.064	.831	.374	.247	.097
	N			38	37	38	37	36	37	35	37	37
Contact # Deans -	Pearson Correlations				1	.438	.116	.285	.075	.391	-.008	.127
	Significance (2-tailed)					.006	.502	.097	.664	.022	.964	.462
	N				38	38	36	35	36	34	36	36
Contact # Professors -	Pearson Correlations					1	.496	.365	-.129	.312	.276	.435
	Significance (2-tailed)						.002	.029	.447	.068	.098	.007
	N					39	37	36	37	35	37	37
Affective based trust	Pearson Correlations						1	.332	-.285	.324	.569	.117
	Significance (2-tailed)							.052	.092	.062	.000	.496
	N						37	35	36	34	37	36
Enjoy working	Pearson Correlations							1	-.155	.510	.145	.047
	Significance (2-tailed)								.368	.002	.406	.783
	N							36	36	35	35	36
Can trust people	Pearson Correlations								1	-.158	-.118	.145
	Significance (2-tailed)									.364	.492	.393
	N								37	35	36	37
Performance	Pearson Correlations									1	.086	-.128
	Significance (2-tailed)										.631	.464
	N									35	34	35
Cognitive based trust	Pearson Correlations										1	.332
	Significance (2-tailed)											.048
	N										37	36
Formal Control	Pearson Correlations											1
	Significance (2-tailed)											
	N											37

Dark Green highlights research hypothesis is supported, dark red highlights research hypothesis is not supported. Light green shows anticipated tendency, light red shows no anticipated direction. Dark Green means research hypothesis is supported at the P < 0.05 level and thereby significant, bright green means that the research hypothesis is slightly supported at around P < 0.10 level, dark red means research hypothesis is not supported but the relationship is significant at the P < 0.05., bright red means that the research hypothesis is not supported and there is no significant relationship recognisable.

Differences between the Deans and Professors

As with Zimmer the differences between the groups of actors in regard to the trust dimensions was computed and compared using a radar plot (see figure 6.3 in the previous chapter. The trust, impact and affect & cognition component were used along with standardiesd versions of the variables internal, cultural and personal tesions and formal control were used. The variables were standardised by taking Z transforms to put them on broadly the same -3 to 3 scale as the variables derived by principal components. The variable sharing information was not available in the Furtwangen case. Differences in the mean scores between the professors and the deans are displayed in Figure 6.1.
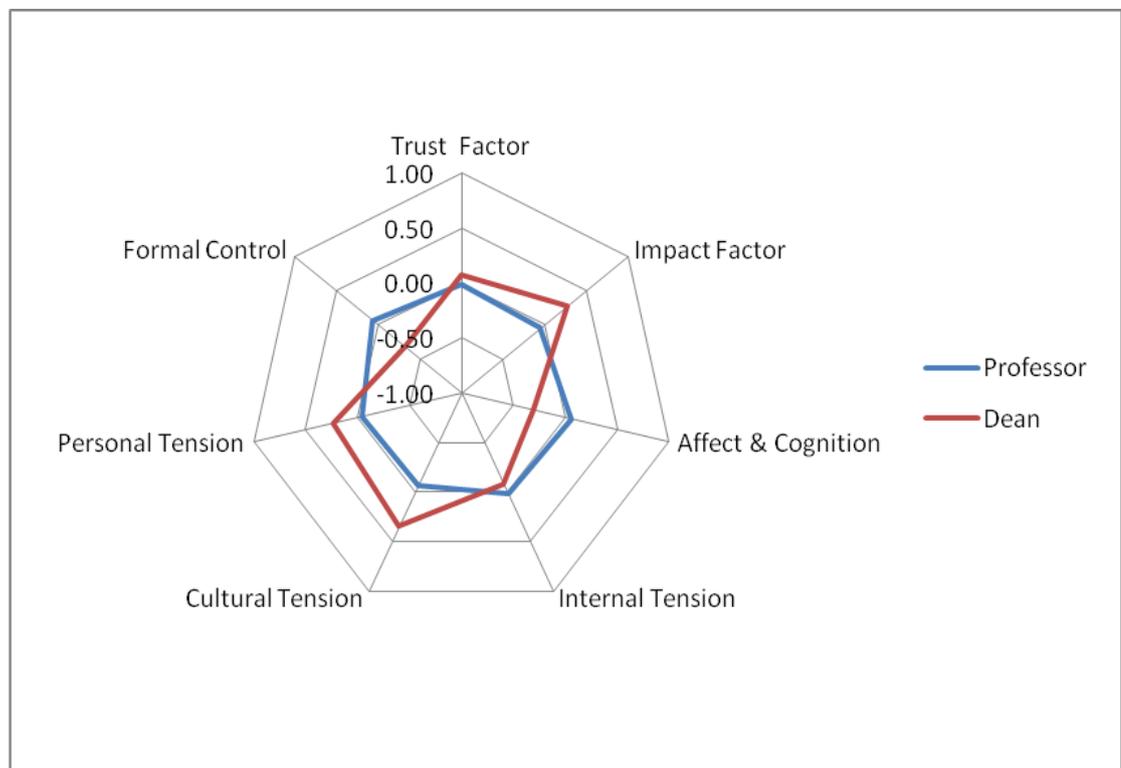
Figure 6.1 Radar plot of mean scores for each organisational function

It is surprising how similar the plot shown in Figure 6.1 is with Figure 5.3. Professors can be thought to take the role of line managers – the blue line and this has the same shape between the two figures. The scores for the deans who are taken as equivalent to management accountants are also broadly similar

between the two figures expect that the deans score lower in formal control but higher in perception of cultural tensions compared to professors.

As with the Zimmer case the respondents were asked about their prevailing norms for trust and the questions and the means of the response for each grade are presented in Table 6.9

Table 6.9 The prevailing norms in relation to trust

Respondent		I think that things done for others should be rewarded quickly.	I think that things done for others should finally be compensated one day.	I think that somebody who has helped others should not necessarily be compensated.
Professors	Mean	2.27	3.23	3.71
	N	30	30	31
	Std. Deviation	.828	1.040	1.006
Deans	Mean	2.33	3.50	4.83
	N	6	6	6
	Std. Deviation	1.211	1.378	.408
Total	Mean	2.28	3.28	3.89
	N	36	36	37
	Std. Deviation	.882	1.085	1.022

These findings are similar to those of the private company in that the more senior staff have higher norms that relate to trust than those who report to them.

Path model

In this section the goal is to build a model to explain the findings of the study in Furtwangen university. This path model attempts to describe the dependencies of the variables: trust, tensions, impact and performance of Furtwangen University. Correlations are not sufficient to explain the dependencies between the different variables. Therefore, we attempt to explain the causility between Trust, Impact of trust, Performance (Success) and Tensions through a path model.

The below model in Figure 6.2 shows the final path model of trust vs performance structure that was constructed using the SPSS product AMOS.

The model has the following attributes: comparitive fit indicator = 0.235, CMIN/DF = 2.189 and Root mean square Error of approximation = 0.238 which does not suggest a very good fit.
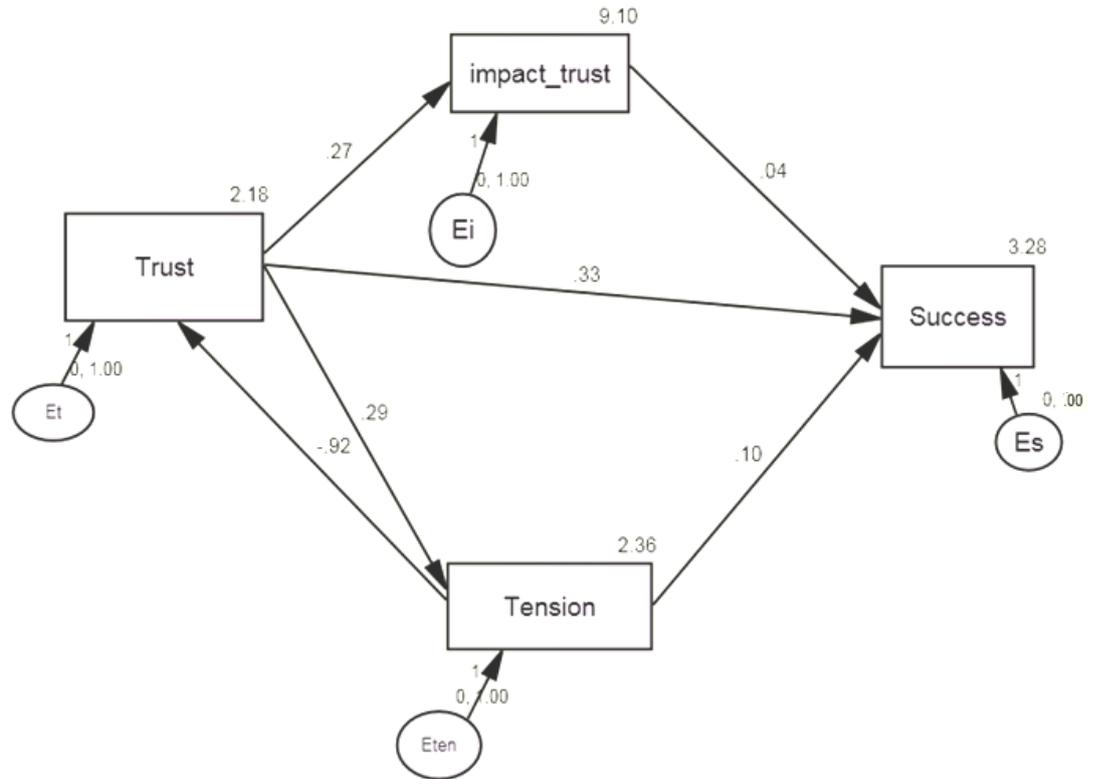
Figure 6.2 Path model

It is illustrated that trust has a direct and indirect influence on the success of an organisation. Trust and Tensions have a reciprocal relationship and influence each other.

Straight arrows refer to standardised path coefficients. Trust, tensions, impact of trust and success are all endogenous variables. This also entails a possible measurement error. In this analysis we indicate these factors as Ei (Error of Impact), Et (Error of trust), Eten (Error of Tensions) and ES (Error of Success). However, these errors are unmeasured to simplify the path model. The exclusion of other parameters (ceteris paribus – exclusion of all other factors) is needed to make the research hypotheses measureable. (Excluding these other factors clearly might increase the degree of falsification of the model). The significance of the slopes of the connecting lines are displayed in Table 6.10

Table 6.10 Scalar Estimates Furtwangen University

			Estimate	S.E.	C.R.	P Value
impact_trust	<---	Trust	.268	.154	1.739	.082
Success / Performance	<---	Trust	.327	.186	1.758	.079
Success / Performance	<---	Tension	.102	.236	.434	.664
Success / Performance	<---	impact_trust	.038	.171	.222	.824
Trust	<---	Tension	-.919	.239	-3.837	***
Tension	<---	Trust	.285	.156	1.833	.067

6.4   Conclusion Furtwangen

Though some of the results are statistically significant many are not and have to be looked at with care. The reasons for that are that there might be a degree of bias involved due to the limited sample size. Additionally, there might be some respondent confusion with regard to terminologies and words. This was excluded as much as possible in this research but can still have an impact.

Regarding the results there is sufficient evidence that trust is seen by respondents to positively impact performance and sustainability and that tensions hinder trust and performance and sustainable business relations in their organisation.   The successful business relationship variable neither correlated well with the trust dimensions nor with the performance or sustainability variable. It could be that for public organisations strong relationships are not necessary to keep operating because the structure of the organisation and the way in which employees collaborate is more formalised - with higher cultural power distances between employees.

However, it was established that performance and sustainability are impacted by trust. The trust measure was validated. It appears to capture trust successfully in public organisations.

6.5   Comparison of investigative studies

The comparison between both cases showed that there are neither major differences in attitudes, collaboration and network formation nor is the impact of trust on performance / sustainability / successful business relationships or the interlinking impacts dramatically different. In Furtwangen the results brought more evidence for the research hypothesis that trust impacts performance than the study in Zimmer GmbH. However, this was most likely because there might have been a time phasing issue with the relation between performance and trust as the successful business relationship dimension revealed partial evidence for trust impacting performance indirectly. While in Furtwangen performance as such is perceived how well students find jobs on the job market in Zimmer the performance is related to financial goals. Financial goals are determined in Zimmer within a horizon of one or two years while how well former students are doing in the job market involves a much wider horizon and is likely less volatile. Looking at Zimmer GmbH's annual reports the performance seems very good as well.

Though both organisations are fundamentally different, both cases are likely prime examples of best practice and ideals for other organisations within their similar branch and environment. It might be the case that having the right (good fitting) and competent people might often be able to overrule less efficient formal systems by creating their own one or finding short cuts. This is the case for Zimmer as it is a matrix organization with less formal rules and likewise the case for Furtwangen University, which is a formalised organisation but where staff has the flexibility in setting up work groups and project teams based on mutual cooperation instead of formally assigned tasks.

The differences of both organisations are large by nature and in particular the adaptations of the questionnaires has had an impact on the results. However, the survey which was reduced for the Furtwangen case worked well. Unfortunately, in Furtwangen Social network data was not provided and replaced with a more simple proxy for ascertaining Social Network impact. A

comparison of how the results of the research hypotheses testing is provided in Table 6.11.

Table 6.11 Research Hypotheses comparison of both studies

Models / Research Hypotheses		Zimmer	Furtwangen
Tension Model			
H[1T]	*Internal conflict of interest leads to tensions between Line Management and Management Accountants.*	**partially supported**	**supported and statistically significant**
H[2T]	*Organisational culture differences leads to tensions between Line Management and Management Accountants.*	**partially supported**	**supported and statistically significant**
H[3T]	*Lack of personal trust between individuals leads to tensions between Line Management and Management Accountants.*	**partially supported**	**partially supported**
H[4T]	*The level of trust between Management Accounting and Line Managers impacts opportunistic behavior.*	**partially supported**	**supported and statistically significant**
H[5T]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.*	**partially supported**	**partially supported**
Impact of trust model			
H[1I]	*The level of trust between Management Accounting and Line Managers impacts transaction costs.*	**partially supported**	**partially supported**
H[2I]	*The level of transaction costs impacts the efficiency and effectiveness in organisations.*	**not supported**	**partially supported**
H[3I]	*The level of trust directly influences the performance within an organization.*	**partially supported**	**supported and statistically significant**
H[4I]	*The level of trust between Management Accounting and Line Managers impacts opportunistic behaviour.*	**not supported**	**partially supported**

H[5I]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.*	**not supported**	**not supported**
Social Network Model			
H[1SNA]	*Social Network has an impact on trust.*	**partially supported**	**not supported**
H[2SNA]	*Social Network has an impact on perception of performance.*	**partially supported**	**partially supported**

      = not supported

      = partially supported

      = supported and statistically significant

'Partially supported' stands for research hypotheses tested partially successfully, pointing in the anticipated direction but is not statistically sigificant – the case for qualitative tests, which concluded that a research hypothesis was successfully tested. 'Not supported' stands for research hypothesis could not be supported as direction is not recognisable or against the anticipated direction, it also is not statistically significant. 'Supported and statistically significant' stands for Research Hypothesis proven.

In both investigative studies no research hypothesis has been denied. The Furtwangen University case provided more statistically significant results compared to Zimmer GmbH.

The overall pattern of the results of the tension model and social network model appear to be similar in both organisations. The impact of trust model can only be partially supported by the Zimmer GmbH case while the Furtwangen University case showed stronger support for the research hypotheses.

It could be that the impact of the other subsidiaries and the global Headquarter of Zimmer GmbH, which were not part of the investigative study have an impact on the overall results. This can be assumed is not so much the case for Furtwangen where only the government department has a major influence.

The comparison between line manager and management accountants was surprisingly similar in both investigative studies. In both cases the line managers (in Furtwangen: Professors) scored similar. The same is the case for management accountants (in Furtwangen: Deans) who should only slight differences. In Furtwangen it appears that Deans prefer less formal control compared to Zimmer. This might be because of the nature of public organisations, which are more formalised compared to a matrix organisation like Zimmer.

Chapter 7

7 Conclusion

This research is one of the rare studies in to trust between business partners and management accountants in a business organisation. It provides guidance for future investigative studies in other organisations with different organisational forms and different trust levels. Additionally, the evolution of a tool for trust measurement in this study and understanding the impact of several components of trust adds to future investigative case research.

Current methods and results described in literature sources did not sufficiently identify the problems of trust and control. There is a lack of unified opinions on major items and trust as a concept has not been operationalised sufficiently. Trust in itself consists of at least two main key components of which one is trust and the other one reliability. In this research these components were separated from each other and it was found that the main driver of trust in an organisational context is mainly associated with competence and benevolence.

Fragmented and overlapping variables contribute to the stimuli of how trust levels influence perception of performance as measure for organisational performance. This research has shed light on the dependencies and interdependencies of most of the factors mentioned in current and recent sources. These factors were reflected in the research design and were a key criteria used in the chosen methodology.

In this thesis the main goal was to find out how the level of trust in management accountants and others impacts on the performance of organisations. In order to do so a measure of trust had to be constructed and developed.

Measures were developed based on literature findings and from the European Quality of Life Survey to ascertain which demographic and socio-economic variables as well as the historic context, have the highest impact on trust and

what models should be adopted for this study. The factors strongly influencing trust were: level of education, type of occupation, state of health, nationality and age of respondents. There were slight associations with trust and gender and the organisational structure where public organisations scored slightly higher in trusting.

Based on the literature a set of research hypotheses was developed and tested with two organisations - Zimmer GmbH, a private commercial company and Furtwangen University, a public organisation using quantitative and qualitative methods. This also allowed differences between the operationalising of trust in public and private business organisations to be identified.

Table 7.1 shows the models and research hypotheses, which were tested.

Table 7.1 Summary of tested Research Hypotheses

Models / Research Hypotheses	
Tension Model	
H[1T]	*Internal conflict of interest leads to tensions between Line Management, Management Accountants and Executives**
H[2T]	*Organisational culture differences leads to tensions between Line Management, Management Accountants and Executives**
H[3T]	*Lack of personal trust between individuals leads to tensions between Line Management, Management Accountants and Executives*.*
H[4T]	*The level of trust between Management Accounting, Executives* and Line Managers impacts opportunistic behaviour*
H[5T]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations*
Impact of trust model	
H[1I]	*The level of trust between Management Accounting, Executives* and Line Managers impacts transaction costs*

H[2I]	*The level of transaction costs impacts the efficiency and effectiveness in organisations*
H[3I]	*The level of trust directly influences the performance within an organization*
H[4I]	*The level of trust between Management Accounting, Executives* and Line Managers impacts opportunistic behaviour*
H[5I]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.*
Social Network Model	
H[1SNA]	*Social Network has an impact on trust*
H[2SNA]	*Social Network has an impact on perception of performance*
Propensity to Trust model	
H[1P]	*High Trusters (measured as those willing to share information) contribute positively to trust levels in organisations*
H[2P]	*Low Trusters (measured by those wishing to have formal control) contribute negatively to trust levels in organisations*

In addition to the research hypotheses, which were tested, several explorative elements were investigated. These were the game theory strategies that executives*, management accountants and line managers chose in relation to trust and the differences between the groups of the factors investigated.

*In the Furtwangen study executives were not tested only in Zimmer executives were part of the study.

Findings

Summary of findings of literature and the Quality of Life Survey showed that several factors are lubricants (or possibly act as obstacles) for trust in organisations and that trust facilitates better performance.

From the case investigation research, the research hypotheses tested were partially supported and these are listed in Table 7.2.

Table 7.2 Research Hypotheses comparison of both studies

Models / Research Hypotheses		Zimmer	Furtwangen
Tension Model			
H[1T]	*Internal conflict of interest leads to tensions between Line Management and Management Accountants.*	**partially supported**	**supported and statistically significant**
H[2T]	*Organisational culture differences leads to tensions between Line Management and Management Accountants.*	**partially supported**	**supported and statistically significant**
H[3T]	*Lack of personal trust between individuals leads to tensions between Line Management and Management Accountants.*	**partially supported**	**partially supported**
H[4T]	*The level of trust between Management Accounting and Line Managers impacts opportunistic behavior.*	**partially supported**	**supported and statistically significant**
H[5T]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.*	**partially supported**	**partially supported**
Impact of trust model			
H[1I]	*The level of trust between Management Accounting and Line Managers impacts transaction costs.*	**partially supported**	**partially supported**

H[2I]	*The level of transaction costs impacts the efficiency and effectiveness in organisations.*	**not supported**	**partially supported**
H[3I]	*The level of trust directly influences the performance within an organisation.*	**partially supported**	**supported and statistically significant**
H[4I]	*The level of trust between Management Accounting and Line Managers impacts opportunistic behaviour.*	**not supported**	**partially supported**
H[5I]	*The level of opportunistic behaviour impacts the efficiency and effectiveness in organisations.*	**not supported**	**not supported**
Social Network Model			
H[1SNA]	*Social Network has an impact on trust.*	**partially supported**	**not supported**
H[2SNA]	*Social Network has an impact on perception of performance.*	**partially supported**	**partially supported**
Propensity to Trust model			
H[1P]	*High Trusters (measured as those willing to share information) contribute positively to trust levels in organisations.*	**partially supported**	**not tested**
H[2P]	*Low Trusters (measured by those wishing to have formal control) contribute negatively to trust levels in organisations.*	**partially supported**	**not tested**

     = not supported
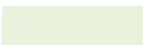
     = partially supported
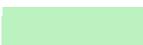
     = supported and statistically significant

The social network formation analysis revealed that management accountants are important bridges for an organisation to function in information sharing and decision making. If both are not provided trust cannot be established and facilitated.

The results in the investigative studies reported in this thesis shows that trust appears to correlate positively with performance when management accountants are well embedded within organisations and have strong social networks. Results confirmed that cultural and internal tensions correlate negatively with trust while personal tensions appear to correlate positively with trust, which does not support the theory. However, due to the limited sample size findings require to be supported by additional research in other organisations.

The path model describing the relationship between performance and trust and the relevant variables did not show a very good fit. The theory has been evolved out of concepts available from literature and observation in the two investigative studies. Some of the findings were difficult to operationalise and some concepts suggested in the literature were dropped because they were found not to have an impact on output variables. These were mentioned during the investigative study evolution e.g. differences based on culture, language and gender. They appeared to have hardly any influence on decision making of whom people trust or rely on, at least in the Swiss/German case.

It also appears that trust dimensions in this case are mainly reliance based and not so much related to pure trust dimensions. Individuals appeared to put most focus on the reliability dimension competence and on the trust dimension termed benevolence.

Discussion

It was found out what trust is, and what it means for business. The question is whether the idea in this thesis can be used for organisations to improve their performance. The implications are that higher trust is associated with higher performance and better efficiency and effectiveness in organisations but also that too much trust might create a drop in innovation capabilities in organisations. Trust was found to associate with performance in both case investigations as well as in the available literature.

Limitations

However, there are a number of problems: The study has partially been based on qualitative methods though the intention was to use more quantitative methods but there was a reluctance of people and organisations to participate in the questionnaire. This resulted in a smaller sample size than desired.

Even though the response rate was reasonable at about 27% in both cases. The sample size is too small to allow discrimination between groups in relation to the rather nebulous and fuzzy measure used in relation to trust.

Additionally, as the questionnaire in Zimmer GmbH was not anonymous (only the publication is anonymised) many individuals might not have answered truthfully to prevent possible harm to themselves or others. The study in Zimmer GmbH touched fields where people are mostly very vulnerable: their social network, their perception of other people's work and their personal data. In Furtwangen University the questionnaire was greatly reduced and respondents did not feel so vulnerable, but less information was gleaned.

Because of the low sample size in Zimmer confirmatory interviews were held with management accountants to support the findings of the questionnaire in relation to social network analysis and the impact on trust and performance.

The validity and reliability were tested in pilot studies and with experts in questionnaire design. However, there remained a potential bias involved.

In order to investigate trust this complicated concept was reduced to observable factors.

This reduction of the complex trust constructs to observable dimensions that can be quantitatively measured might have resulted in a degree of bias.

Many results were not statistically significant – most likely due to the small sample size and imprecision in defining the measures. So the reliability and validity of the results are questionable from a quantitative standpoint. However, this study was one of the first of its kind and had many explorative elements, which can inform later research.

The uncertainties of this study are also related to the amount of investigative studies, which should be expanded in number to add more evidence to the research hypotheses and models. There is still some difficulty in measuring relations of trust in private organisations compared to public organisations. Viklund's assessment that trust is more difficult to capture in private organisations compared to public organisations is confirmed (Viklund 2002) though the question remains as to how the result in Zimmer would have turned out if the questionnaire had been completely anonymous. This research attempted to take differences into account and was successful but it could become more clear if there were more cases available.

However, despite these potential short-comings the results reflect other research results using other research methods to those documented in this research. The results from this research can be further tested, analysed and designs improved in future research.

Despite the limitations the following is established from this research: The research hypotheses are partially supported and none were completely rejected. In practical terms the approach taken in these investigative studies

could also add value for organisations. The research methods used provides a toolbox for organisations: It could help them measure their current trust levels and understand where trust is blocked or fostered within their organisation. Therefore, aspects of this research can be used as a set of tools for enterprises to identify bottlenecks of trust in the management accountants, line managers and executives relationships.

Contribution to knowledge

When researching the relations of trust in organisations and management accounting, the question arises how this research can be done. Especially in light of problems in getting access to organisations and finding research methods which are appropriate and feasible.

Research conducted with qualitative methods are very common in trust research and several authors have recommended alternative methods that are often quantitatively based. Quantitative based methods are seen to add more value because they have less bias.

The reasons why qualitative methods were chosen in the past were often based on rather low response rates and smaller populations, which in turn made quantitative research technically a less attractive choice but also the perception that trust is an intangible concept.

Generally, this research aimed to accommodate both qualitative and quantitative approaches in a mixed method design. The research followed an investigative study approach, which has been used often by other authors in trust research.

The question arises as to how to find a way to do research when the population is not very big and using partially quantitative methods. With 30-40 responses per case to construct a research design and set an approach to do a statistical analysis under these conditions was a considerable challenge.

In this research several approaches are presented as to how to make a simple descriptive statistical analysis under these conditions. The success of the methods chosen are mixed but overall they did allow solid insights to be gained.

While Pearson correlations worked well despite the small sample size, the AMOS models to prove causality did not show a good fit but their construction was possible. On another note, the social network analysis was very suitable for this type of research and can be seen as an excellent method in this environment. The problems of the social network analysis were more due to the non-anonymous questionnaire design, which makes response rates even lower because of the larger vulnerability for participants. However, in this research a suitable replacement was found for the classical social network analysis in the Furtwangen case and manage a reliable result by keeping the questionnaire anonymous.

Factor analysis was used to reduce amount of questions and find multidimensional trust measures but a further challenge was that the initial questionnaire for Zimmer was large and people mentioned that they found the questionnaire too long.

The research revealed that existing measures of trust were insufficient to capture the trust phenomenon. This was part of the effort to understand the state of the current trust research. This also included recent results in trust research in German literature where there are different schools of thought, but which, to date has not been pursued in English literature.

Hence, in this research, the development of a new trust measure was a methodological achievement as there was no trust definition, which included all trust dimensions found to date. These trust dimensions were verified in this thesis.

The development of an interdisciplinary grant trust model was another methodological contribution as this has not been attempted before. The new

model combines existing ideas and schools of thought such as game theory, psychology and economics.

In developing measures and showing a research approach and identifying where more work is needed, the grant trust model culminated in the construction of a toolbox to research trust by surveys within organisations. This application was part of an attempt to provide organisations with practical input on how they could understand and finally improve their trust levels. Producting this for application was another achievement. Reducing the size of the questionnaire and providing a simpler and more concise guidance made the appreciation of the approach easier. This contribution serves as guidance to future studies.

This research further established evidence for most of the alternative research hypotheses and therefore there is confidence in the recommendations and the outcome of this research. The reason why confidence can be established is because results from both literature research and the investigative studies supported the research hypotheses and allowed successful triangulation.

Additionally, this research elaborated existing models and brought them into the context of different organisations and types of organisations, and shed light on the effects on the model when conditions in organisations change.

This research demonstrated an effective multimethod approach when sample size is low and access to organisations is restricted. This showed that research is possible when the sensitivities of respondents are very high and consequently defining criteria which make such research feasible. This research also contributed to the understanding of limitations in trust and management accounting research.

The explorative aspects of this work put forward approaches for intraorganisational research to shed light on management accounting and trust. This involved one of the first applications of social network analysis in a new

context like management accounting and trust. Additionally, this research highlighted the trust dimensions, which statistically are relevant for forming trust factors.

Part of the explorative aspects were also empirically-based observations related to game theory and the strategy how the groups of management accountants, executives and line managers tend to select when trusting in an organisation. In Zimmer case it was found that executives chose the higher trust strategy more often compared to management accountants and line managers who prefered the medium to low trust strategy.

The model presented in this research is important. There were several reasons for this. One reason was to improve general understanding of trust in management accounting, the impact of trust on performance and other interacting factors as well as how an organisation wishes their stakeholders to collaborate with each other. The second reason is that this positivistic model can be used to contrast against other or new models being constructed in the same field. The third reason is that the models were designed to include aspects from different schools of thought to prevent a dissociated model design and thus increase reliability and validity. Designing this model and selecting research methods to gain an understanding of how trust impact on performance in management accounting was the main achievement in this research.

This research has contributed to fill in gaps in literature. The gaps discussed in in the end of Chapter 2 have partially been filled and gave insights into how trusts operates in public and private organisations, the socio-economic characteristics trust relates to have been explored using the European Quality of Life Survey (more details can be found in the appendice. Additionally, gaps in literature related to quantitative studies have been filled and a method was developed to do research when sample size is very low in Chapter 5 and 6.
A more comprehensive trust measure was developed in Chapter 3 and examined by the use of two investigative studies in Chapter 5 and 6. The interaction of impact of trust on management accounting and vice versa has

been explored and has filled a gap in the literaturre.. Organisational tensions although well described in literature have been laid out more accurately in relation to the trust construct than done in the literature found in this research. Impact of trust on organisational performance, sustainability and successful business relationship forming has been explored in more detail and evidence has been forwarded by the two studies conducted in Furtwangen and Zimmer.

Recommendation for practice

This research provides a basis of understanding of trust in management accounting and its importance.

This study showed that organisations with low trust levels are likely to have unused potential, which in the light of increased global competition becomes a major obstacle for success. These organisations could, by improving trust levels, also foster a culture of accountability and thus increase their competiveness. By applying the methods developed in this work organisations can diagnose their trust levels and make suitable changes when they are low.

The profession of management accountants today varies between countries, companies and individuals. A possible improvement for management accounting could be to improve their understanding of other fields in the organisation and widen their interest beyond finance. In order to obtain, interpret and understand information, it is important to have at least an idea of what other departments are doing. This is often a problem when Chartered Accountants or other professional associations become reognised as separate "professions" and become so strong and protectionistic that job rotation within finance and across other departments becomes impossible. This causes a self interested profession which has little idea of what is going on in other departments because they have been following a standardised education curriculum and does not benefit from synergies with other fields. Their social network will be weaker and their knowledge limited to finance only. They will

also potentially miss out on best practices being used in other departments as well as interdisciplinary learning. Adding people from different paths of becoming management accountants would increase synergies and collaboration. This would lead to improved trust.

Eventually, it can be construed that a combination of managerial measures to create a corporate culture of accountability facilitates trust and improves their performance in the long term. Such measures range from e.g. human resource hiring decisions (facilitating personal trust by hiring the best fitting people) up to defining and transforming entire organisational structures and incentive schemes (facilitating organisational trust). It can be concluded that as mediators between executives and line management, management accountants themselves are key in creating and nurturing trust. They are important bridges and connectors within the organisation. Management accountants as a consequence of their structural position, act as brokers in knowledge sharing and are in positions that make them important in the diffusion and facilitation of new ideas. Therefore, management accountants should be empowered to be able to create a culture of trust. It appears detrimental for an organisation if management accountants become a 'sandwich' between executives and line management due to organisational tensions or opportunism and are only allowed to act as functionaries of the system who solely audit, check and ensure compliance.

Personal trust can probably be improved by systematic coaching initiatives and conflict resolution training of all stakeholders in an organisation.

Generally, it can be construed that management accountants are partially facilitators of trust. Management accountants for themselves have to decide whether they want to work as professionals trying to create transperancy between 'Plan and Actuals' and help all other stakeholders to understand the reasons or follow routines to put a so called 'objective measure' on a 'subjective idea' for political reasons (Schmidt 2010).

Management accountants are likely to be perceived as more trustworthy in organisations if they adopt a more self critical attitude about their role in their relevant organisations rather than viewing themselves as value adders, while their actual tasks are mainly to provide resource allocation and support to decision making thus only indirectly adding value.

Line managers should attempt to share information with management accountants frequently and should be honest and direct. They should try to work in partnership with their accountants and should not view them as 'schoolmasters' but as key facilitators of resources for projects. A clear business plan where accountants are involved from the beginning is often helpful for accountants to justify funding allocation to projects in front of executives.

As shareholder representatives executives are primarily responsible for how line managers and accountants are formally set up in the organisation. They are in fact the main decision makers and should keep in mind who they hire, what corporate culture they foster and what organisational structure they choose to establish. Accountants and line managers only have limited influence in most organisations although probably enough to make a difference within their circle of influence.

Recommendation for Academia

The main contributions in this research were the verification of trust dimensions, establishing a model and providing an approach to researching trust in organisations.
Today the accounting and trust research suffers from unfinished theoretical foundations in many areas. Especially comparing different studies and models it would be helpful to establish more standardised approaches for trust and accounting research.

The goal of this research was to construct models based on the literature on trust and management accounting. Hence, several models have been constructed to improve the understanding of the role of trust in management accounting. The models designed facilitate additional empirical research in similar areas:

Further empirical evidence of the interaction of organisational structures and trust would be very supportive. Additionally, explorative studies to identify additional trust dimensions which were not mentioned by other authors or were not identified in this research could have an additional impact on future research results.

The impact for intra-organisational relationships when trust breaks down between Management accountants and other stakeholders has received little attention in research. Also the conditions and methods as to how trust can be rebuilt in an organisational setting between accountants and other stakeholders requires additional research. From this it can be concluded that there is a need for more research in the area of trust impacting management accounting in different national cultures and organisational structures.

Generally, more research is needed for the relations of trust impacting performance in an management accounting context as phasing issues are making direct links difficult to observe. Longtitudunal studies over longer time periods are needed to further supplement evidence for the impact of trust on performance. This is because causality is difficult to observe when a cause results in delays which have further consequences. This could not be implemented in this research due to time and resource constraints. Other studies might be able to research several cases concurrently with longer time horizons.

Within this research it was revealed that the questionnaire should be anonymised or coded at the time of distribution if personal indentification is needed because participants and organisations will feel less sensitive and the response rate is likely to be higher.

It is very important to get buy-in from executives, department leaders, the works council and the employee representatives. It might be helpful to declare that anonymity of the respondents will be preserved in any publication. Additionally, it is likely more successful if a questionnaire which is not too long is provided.

Additionally, it was very difficult to get access to companies and organisations willing to participate in such an in-depth study. Other researchers might not face this problem but it was the case with this research. The questions were of a sensitive nature resulting in objections by management and other stakeholders when considering participation. Therefore, the two cases are likely to be examples of well functioning organisations, which show high degree of trust levels and thus were more willing to participate. To shed more light on these relationships a study in a low trust organisation would be of high importance. However, the practical dilemma is that organisations with lower levels of trust are likely to be less willing to participate the suggested research approach because of potentially bad publicity and consequently criticism of management and other stakeholders.

The future outlook for additional research could be on focusing on companies with low trust level to shed further light on the impact of trust on network formation and organisational performance. Future research will likely have to be built on anonymous questionnaire designs.

Appendices

A.1 Existing data – European Quality of Life survey

In this chapter empirical evidence is sought to support or otherwise the concepts of trust advanced in the literature. Here the most recently available European Quality of Life Survey (EQLS), (Economic and Social Data Service 2012) for which questions were asked about trust was used. This will allow an understanding of how trust is affected by national culture, gender, age, marital status, organisational structure and job type. The chapter begins with a short description of the European Quality of Life Survey (EQLS) and how it is conducted. The survey for 2003 was downloaded from the Economic and Social Data Service (University of Essex 2012) and the question pertaining to trust is:

> "Q23 Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please use a scale from 1 to 10, where [1] means that 'you can't be too careful' and [10] means that 'most people can be trust"

There were no other questions relating to trust in this survey.

The trust question is put in context with other factors related to gender, age, type of job of respondent, organisational structure the respondent works in, their education and their marital status, to identify whether trust levels vary across these factors.

Simple descriptive statistics are used to relate the various socio-economic and demographic factors to the level of trust perceived and an attempt is made to model these influences on trust using regression methods. In this study the whole survey is analysed and compared to Germany and Austria. The study is focused on Germany and Austria because the empirical data collection part of

this thesis is conducted in organisations situated in German speaking cultures (Zurich in Switzerland and Furtwangen in Germany). Unfortunately, data for Switzerland was not available from this study. As Austria and Germany are founding member states of the European Union we used a 15 member founding states variable weight approach for the comparison between Germany, Austria and the other European founding member states.

The European Quality of Life Survey

> "The *European Quality of Life Survey* (EQLS) is a representative, questionnaire-based household survey series." (Economic and Social Data Service 2012).

> "The European Quality of Life Survey is carried out every four years. The European Quality of Life Survey (EQLS) examines a range of issues, such as employment, income, education, housing, family, health, work-life balance, life satisfaction and perceived quality of society. It was one of the first steps in a major initiative to monitor and report on living conditions and quality of life in Europe.

> The survey was carried out for the first time in 2003, covering 28 countries (25 Member States and three candidate countries). The second iteration took place in 2007" (EUROFOUND 2010).

The second study, in 2007, had unlike the first study in 2003 no questions related to trust and hence, the 2007 survey was not considered in this research. Few studies have been made using this with regard to trust research.

The study was funded by the European Union and the sample covered 25 European Union countries, plus Bulgaria, Romania and Turkey, in 2003.

There were 1,008 individual responses in Austria and 1,052 in Germany.

The response rate in Austria was 63.9% and in Germany 91.2% (Economic and Social Data Service - Intomart 2003, pages: 10,14).

> The response rate in Germany is very unusual. The WZB states in 2004 that "In the case of Germany this figure should be treated with caution, because under normal circumstances, the response rates obtained by very dedicated pollsters are only about 50%" (Wissenschafts Zentrum Berlin 2004, page 2). Ultimately, it depends on how the sampling was done.

The response rate European wide (EU15) was 54.4% (Economic and Social Data Service - Intomart 2003, page 8).

The population consisted of adults (aged 18 years and over) residing in the respective countries in 2003. The data was collected by face-to-face interviews. The goal was to conduct at least 1,000 interviews in larger countries, which were eligible for this research. In countries with smaller population such as Luxembourg and others the goal was to conduct at least 500 valid interviews. However, depending on the response rate, and the hard-to-count households (such as households with language difficulties, disabled target persons, uninhabited households, unsuccessful repeated visits etc.) the gross sample varied strongly in different countries (Economic and Social Data Service - Intomart 2003, pages 1-59).

The questionnaires were available both in English and in languages specific to the countries in which the survey was being conducted (European Foundation 2003).

Analysis

In Figure 8.1 the distributions of the responses to the general trust question are displayed for the whole survey and specifically for Germany and Austria. It is observed that the mean response for the founding EU15 countries is 5.3 while for Germany and Austria the mean response is 4.84, which this is significantly lower at the 5% level than the EU15 average.

Mean = 5.3
Std. Dev. = 2.257
N = 17,586

Q23 Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please use a scale from 1 to 10, where [1] means that 'you can't be too careful' and [10] means that 'most people can be trust
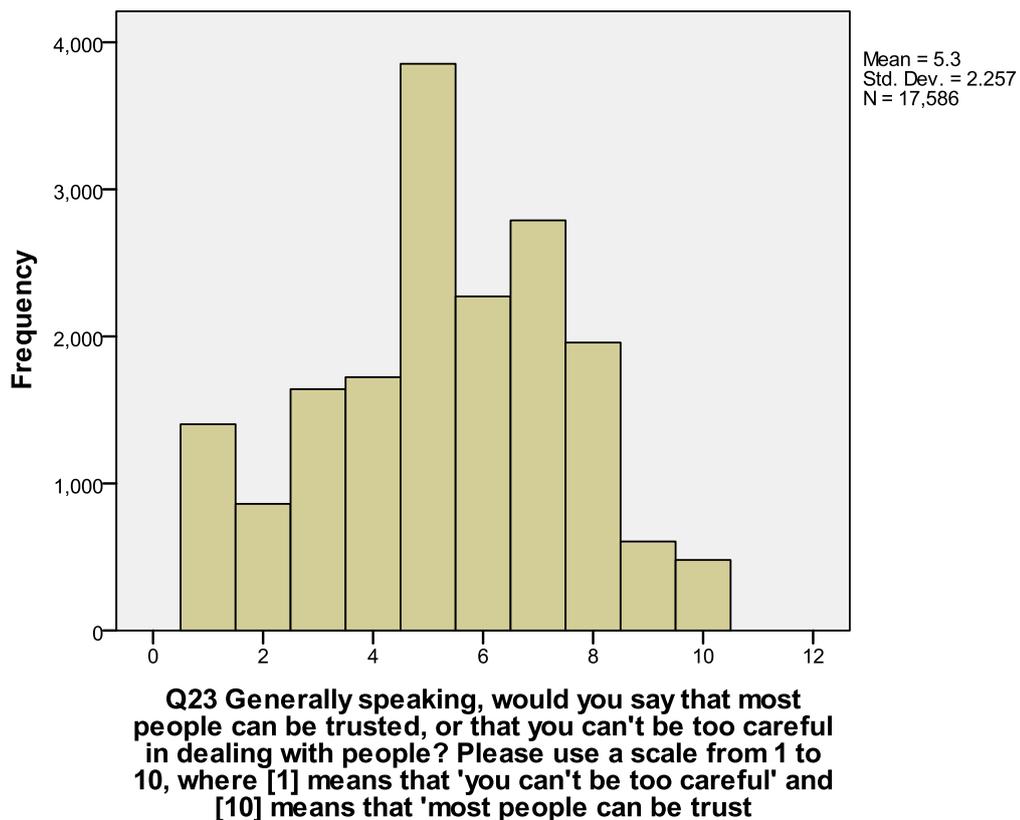
Cases weighted by Weight variable for EU15 sample

Figure 8.1 The distribution of responses to the general trust question across the EU15 countries
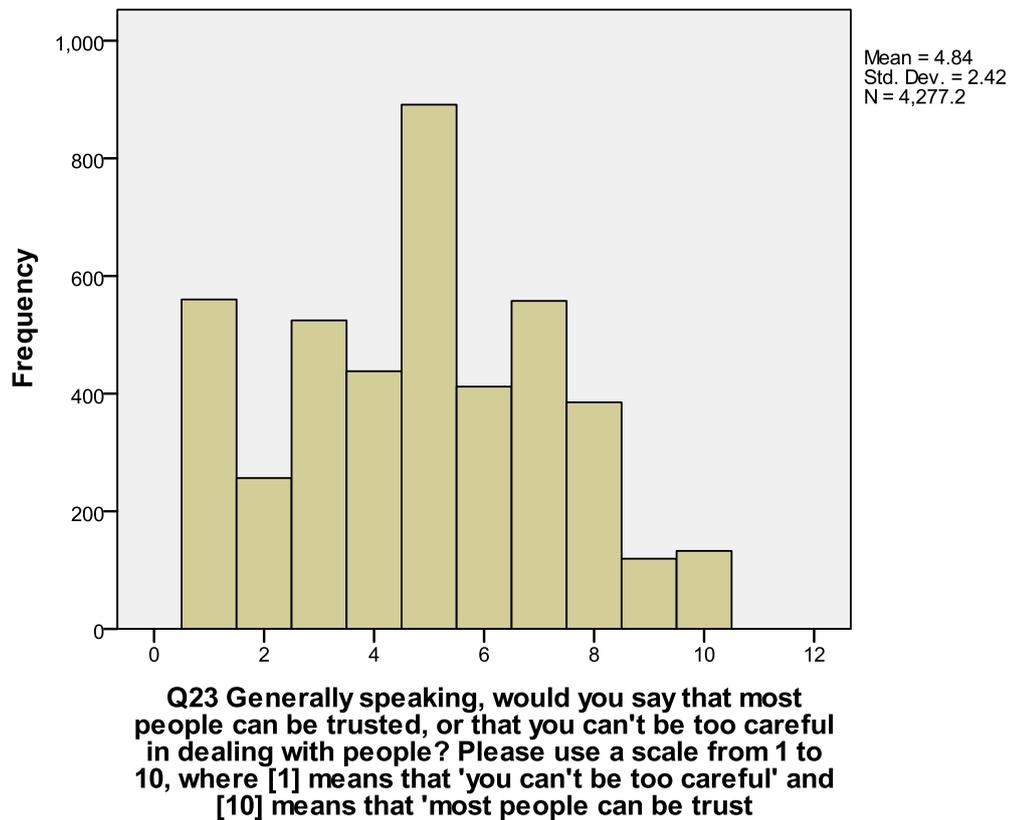
Figure 8.2 Distribution of responses to General Trust Question for Germany and Austria

How Austria and Germany compare to the other original 15 EU countries is presented in an error bar plot in Figure 8.3. This reinforces the differences which are evident in Figures 8.1 and 8.2 that levels of general trust in Austria and Germany are lower than most EU countries. It is also observed that the error bars are very small for Germany indicating very consistent responses in the German sample.
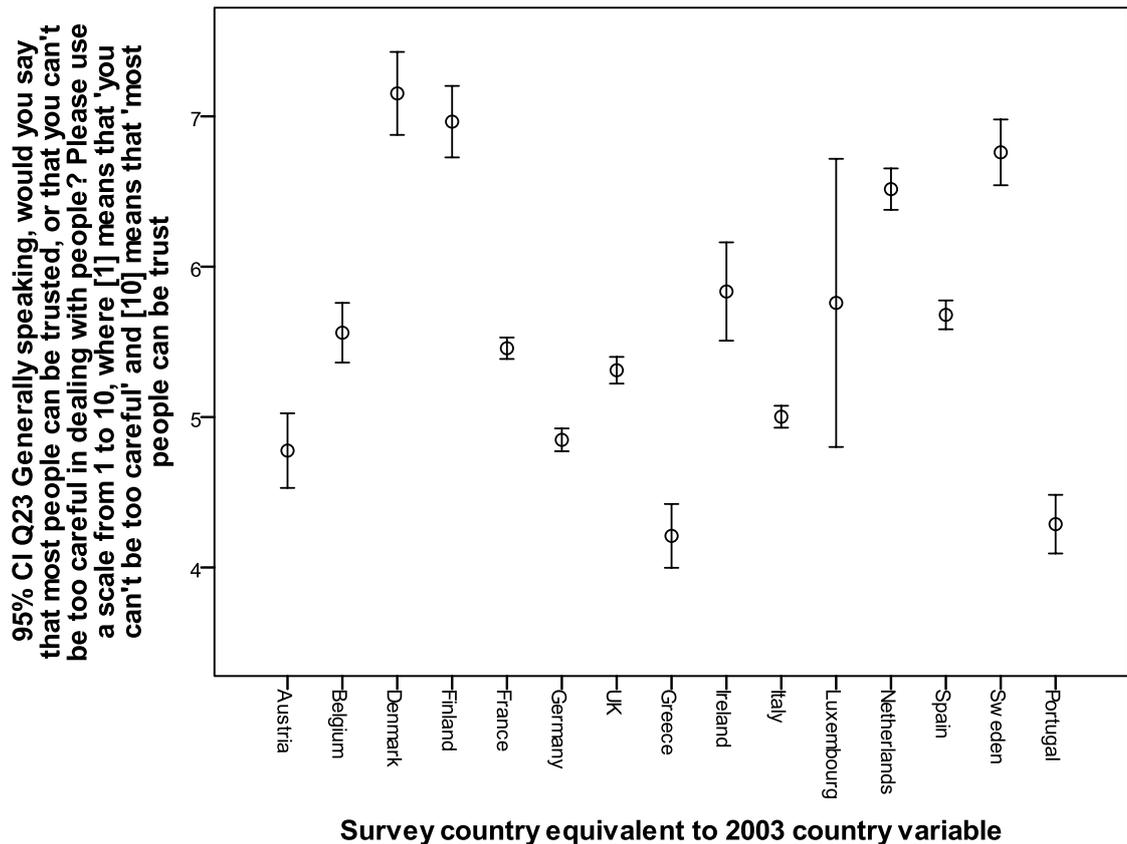
Figure 8.3 Error bar plots of mean responses by country to the general trust question.

Though the economic data service states in 2003 that "during the late Spring, early Summer of 2003, there were no significant events that could have affected the way people respond to the survey questions" (Economic Data Service - Intomart 2003, page 4). It neglects to mention that for example Germany went through several social and other reforms (e.g. Agenda 2010) in 2003, which may possibly have caused some disruption in some parts of the population at the time. This could perhaps partially explain the relatively lower trust levels compared to other European member states. Other socio-economic, historic and demographic factors might also have caused these lower levels of trust.

However, a more likely to explanation of this variance is the assumption that the interpretation of the word "trust" might be different from culture to culture and language to language. This is supported by the similar results of the mean

between the two German speaking countries Austria and Germany in Figure 8.3.

Age

How trust varies with age is illustrated in Figures 8.4a and 8.4b

| Figure 8.4a Age and Trust in the EU 15 countries | Figure 8.4b Age and Trust in Austria and Germany |
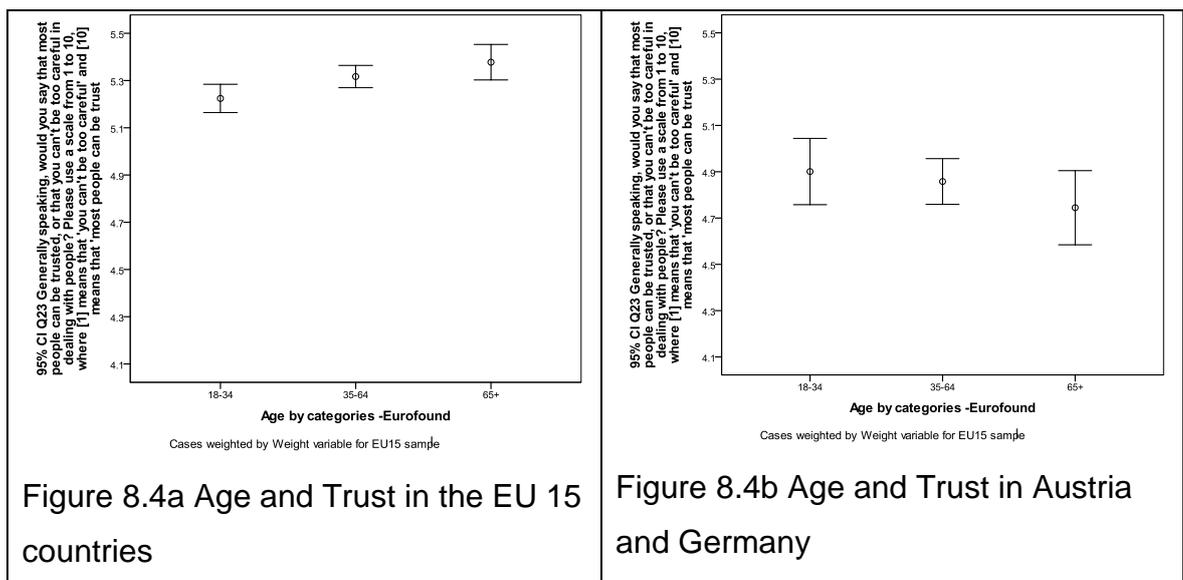
Age plays a fundamental role in how trusting people are of one and another. In the EU15 it can be seen in Figure 8.4a that the older people are the more trusting they become.

From this analysis it is clear that Austrian and German attitudes to trust differ with age from the other EU15 countries in that people in Austria and Germany are much more distrustful – this is especially so for older people which is contrary to the other EU countries. The reasons for that might be related to the fact that the 65+ age group grew up during or shortly after the Second World War. The basic trust a child receives from their mother in early childhood might have been shattered.

From the age of 65 onwards many women often become widows. Traditionally, their male partners tend to be older and their life expectancy is lower than that

of women. This is the case for all European countries. However, during the Second World War many men in Germany and Austria either died or became prisoners of war with severe psychological and physical consequences. Therefore, many women in that generation remained unmarried, possibly resulting in isolation and mistrust. This could lead additionally to decreased trust levels in both Germany and Austria and likewise for men and women.

In organisations today people aged over of 65 years are rare. However, the lack of qualified personnel and the improved health situation of many pensioners organisations may increasingly try to recruit people regardless of their age. Therefore, organisations are likely to have more older people in work places. Hence, the impact of age on trust levels should be investigated more closely for any future analysis of organisations. Nevertheless, as of today this is not yet the case and cannot be considered for the current trust research.

Therefore, in the rest of this chapter the analysis is confined to those under age of 65 years, which equates to the working age population and fits with the following empirical studies.

Gender

Using an independent samples t test for all the EU15 countries males were found to have a slightly higher level of trust than females with mean trust scores of 5.32 and 5.25 respectively. This difference is statistically significant at the 5% level (P value = 0.045). For Austria and Germany the respective means fall to 4.84 and 4.90 and here the difference between males and females is not significant (P value = 0.460).

Housing Type (Marital structure)

Considering household structure there were no significant differences between different household types. However, single parents did score their level of trust lower and this is illustrated in Figure 8.5. For Austria and Germany the distribution of responses to the trust question were similar although at slightly lower levels of trust.

Cases weighted by Weight variable for EU15 sample
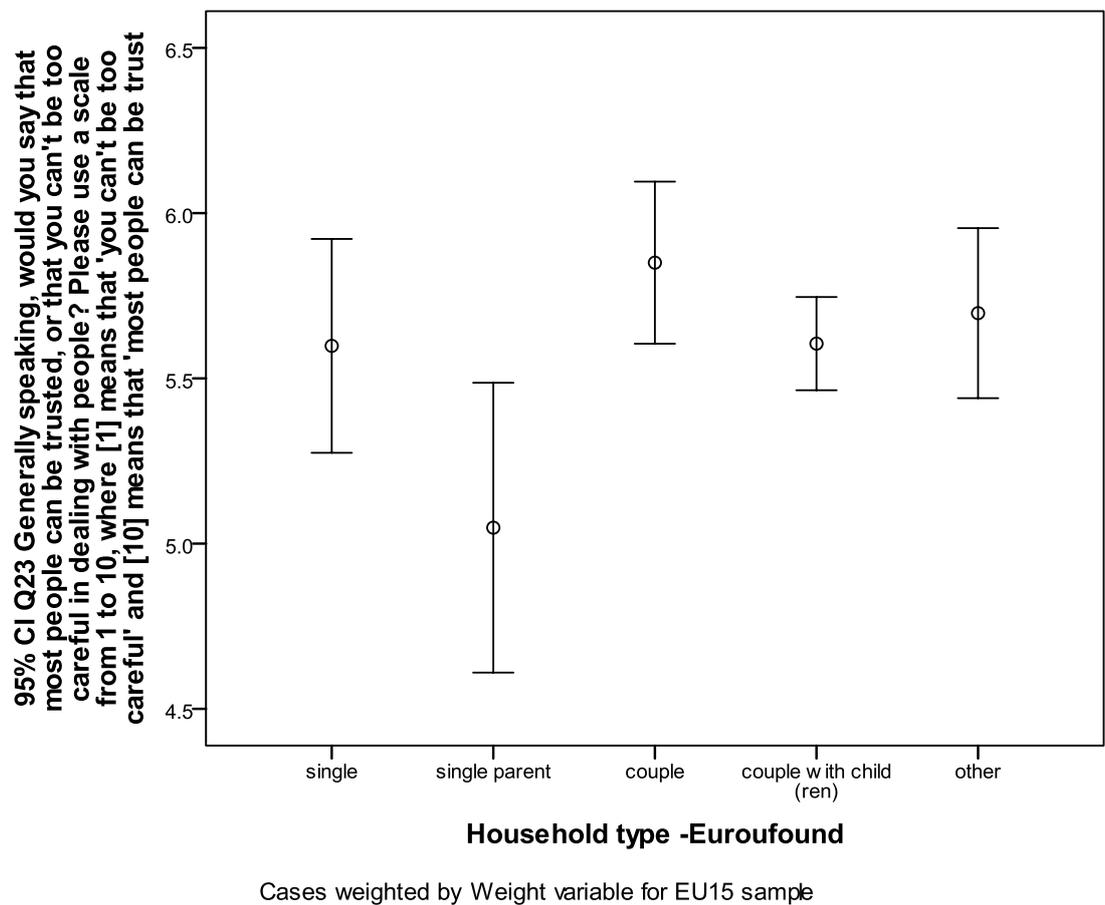
Figure 8.5 Trust by household type in Germany and Austria

Health

Health was categorised on a Likert scale and it seems that those with fair or bad health are not as trusting as those in good health. For Austria and Germany the level of trust does not fall as steeply as health deteriorates compared to all EU15 countries. The situation is displayed in Figure 8.6a and Figure 8.6b.
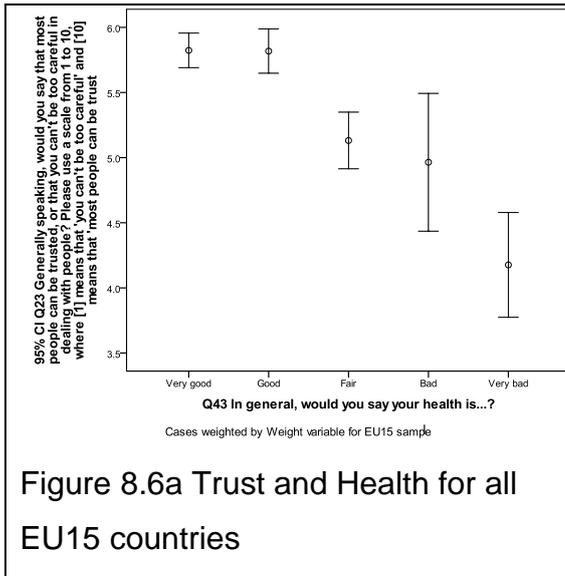
Figure 8.6a Trust and Health for all EU15 countries
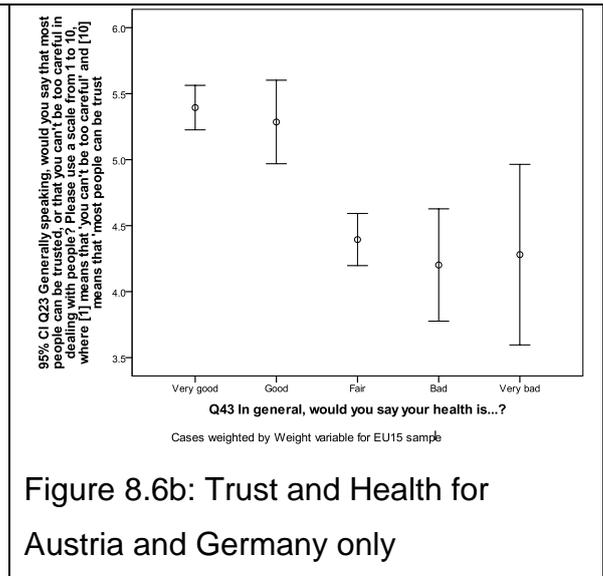
Figure 8.6b: Trust and Health for Austria and Germany only

Education

There is a general trend of higher levels of trust as education increases. Using an independent sample t test to compare those with less than ISCED level 4 with those at ISCED level 4 or higher revealed that for all EU15 respective mean general trust levels of 5.48 and 5.99 which are significantly different (P value <0.001). For Austria and Germany on their own a similar significant difference was found (P value <0.001) but the respective means were slightly lower at 4.84 and 5.58.

> ISCED-3 stands for apprenticeship / dual school
> ISCED-4 stands for secondary school / Highschool

It appears that people with an education of A-levels (in German Abitur / Matura) or above tend to have higher levels of trust in people than people with lower levels of qualification.

However, there might be a certain degree of inaccuracy involved. The WZB states that "the variable (for education) proved to be difficult in the pilot study and had therefore been cut. Normally the ISCED is recoded from national

education levels by experts, here every respondent should be able to categorise themself directly into the ISCED schema. As a result less effort had to be spend on the recoding of national education levels. However, the variable related to the subjective assessment of the educational level does not prove to be feasible." (Wissenschafts Zentrum Berlin 2004 page: 34). The WZB further claims that the question related to education did not comprise a section 'currently studying'

People who had not finished their education yet and who had not been awarded a degree were not sure how to fill the questionnaire. Whether they should mention what they study at the moment or only mention the degree they received in the past (Wissenschafts Zentrum Berlin 2004).

Occupation

How general trust varies across occupation types is displayed in Table 8.1

Table 8.1 Trust by Occupation Type

Q23 Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please use a scale from 1 to 10, where [1] means that 'you can't be too careful' and [10] means that 'most people can be trusted.

Q2 What is your current occupation?	All EU15			Austria and Germany		
	Mean	N	Std. Error of Mean	Mean	N	Std. Error of Mean
Farmer	9.67	112	1.777	5.30	10	1.174
Professional (lawyer, medical practitioner, accoun	5.66	326	.238	5.79	47	.331
Owner of a shop, craftsmen, other self-employed person	5.59	543	.339	4.74	33	.399
Business proprietors, owner (full or partner) of a	5.76	288	.189	6.19	106	.405
Employed professional (employed doctor, lawyer, ac	6.20	354	.115	5.98	62	.345

General management, director or top management (ma	7.15	314	.663	6.68	107	1.175
Middle management, other management (department he	6.00	1246	.139	5.37	404	.108
Employed position, working mainly at a desk	5.51	1566	.091	5.10	293	.256
Employed position, not at a desk but travelling (s	5.25	441	.161	4.68	96	.197
Employed position, not at a desk, but in a service	5.50	1317	.121	5.05	328	.133
Supervisor	5.27	194	.163	5.19	28	.457
Skilled manual worker	5.24	1599	.121	4.45	409	.272
Other (unskilled) manual worker, servant	5.46	703	.319	4.38	201	.277
Total	**5.66**	**9012**	**.061**	**5.10**	**2126**	**.099**

It seems that those in more professional and or more skilled occupations have higher levels of trust. This will be important to bear in mind in the empirical investigative studies where more professional groups are the subjects. There might also be some influence due to educational level - the higher the level of education the more trusting people are.

Variations in the level of general trust of people who were employed in the private or public sectors are displayed in Figure 6.7a and Figure 6.7b. Although there are no statistically significant differences the mean level of general trust is higher in public sector companies than private ones in Austria and Germany.
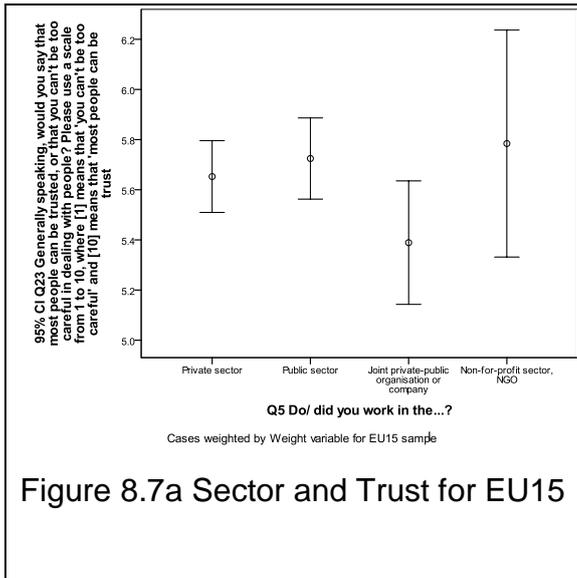
Figure 8.7a Sector and Trust for EU15
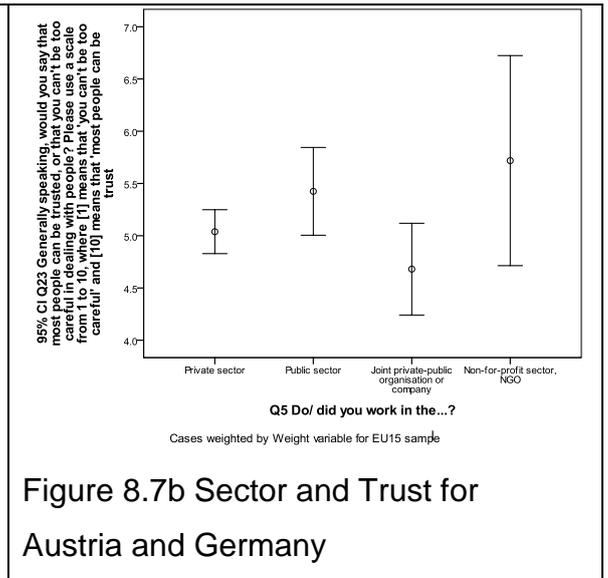
Figure 8.7b Sector and Trust for Austria and Germany

House Ownership

Here house ownership is taken as a rough proxy for wealth and will be used to get an idea if the level of general trust is dependent on wealth. Trust appears to decrease with less house ownership as can be observed from the case of Austria and Germany, illustrated in Figure 8.8. A similar situation appeared for EU15 countries.
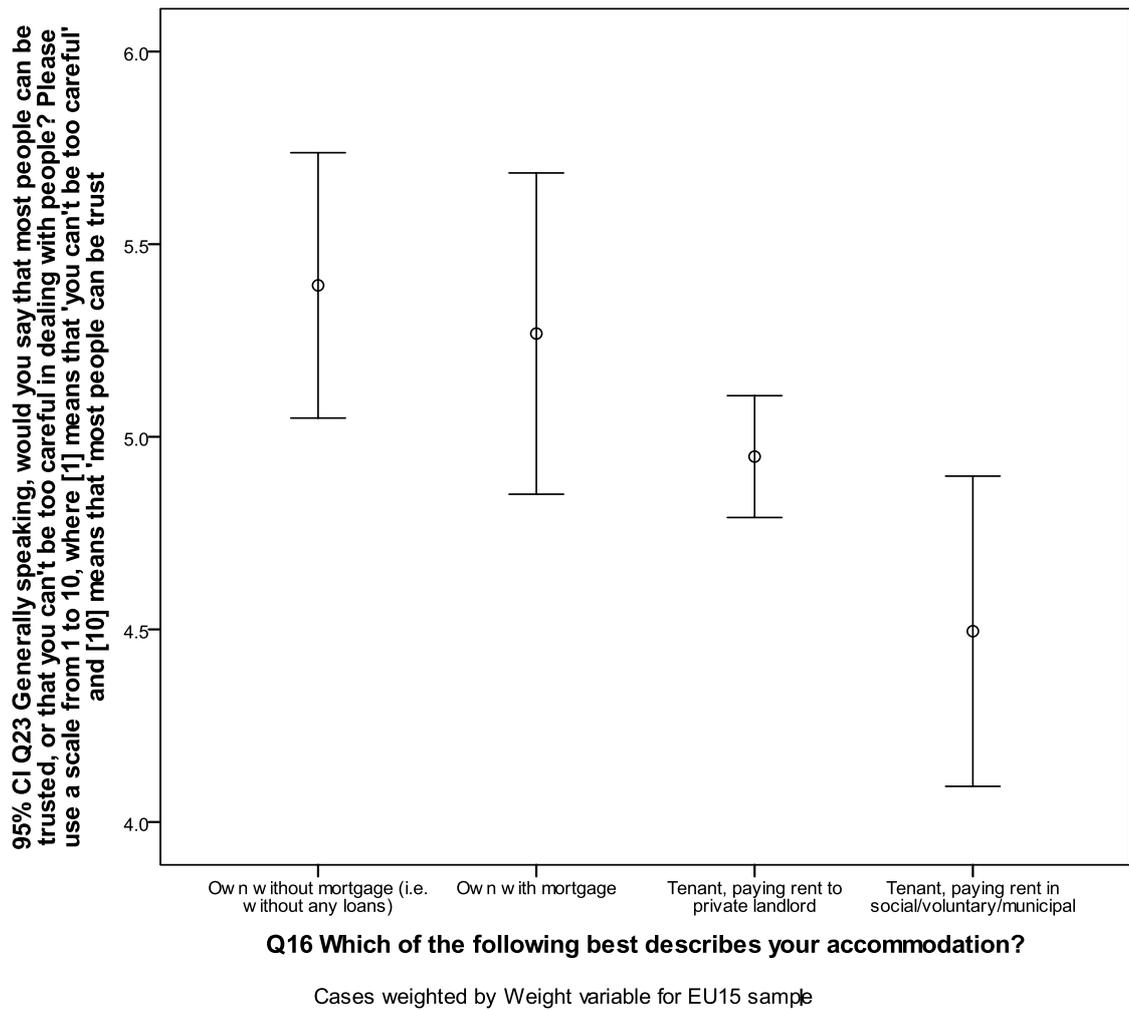
Figure 8.8 Trust and housing type

Model of Trust

Confirmation of the significant association between the factors discussed above and trust is given by the Pearson coefficients displayed in Table 8.2.

Table 8.2 Pearson correlation coefficients

|	AGE OF RESPONDENT	HAPPYNESS - Taking all things together, how happy would you say you are?	SATISFACTION IN LIFE - All things considered, how satisfied would you say you are with your life these days? Please use a scale from 1 to 10 where [1] means 'very dissatisfied' and [10] means 'very satisfied'.	SATISFACTION IN JOB - a good job / Q41 I am going to read out a list of things that some people say are important in their quality of life. Please tell me how important each of these is in your quality of life.	HOUSEHOLD INCOME - Please can you tell me how much your household's NET income per month is? If you don't know the exact figure, please give an estimate.
GENERAL TRUST - Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please use a scale from 1 to 10, where [1] means that 'you can't be too careful' and [10] means that 'most people can be trusted	-.005	.037	.095	.024	.028
AGE OF RESPONDENT	1	.009	.033	-.013	-.004
HAPPYNESS - Taking all things together, how happy would you say you are?		1	.212	-.014	.107
SATISFACTION IN LIFE - All things considered, how satisfied would you say you are with your life these days? Please use a scale from 1 to 10 where [1] means 'very dissatisfied' and [10] means 'very satisfied'.			1	-.060	.241
SATISFACTION IN JOB - a good job / Q41 I am going to read out a list of things that some people say are important in their quality of life. Please tell me how important each of these is in your quality of life.				1	-.088
HOUSEHOLD INCOME - Please can you tell me how much your household's NET income per month is? If you don't know the exact figure, please give an estimate.	-.004	.107	.241		1

From Table 8.2 it appears that happiness, satisfaction in life and satisfaction in job are correlated positvely with trust and with each other.

An ordinary least squares regression model of trust was obtained using as independent variables gender, single parent, health (fair/poor/bad), education

ISCED 4 or higher, public sector employee, if in social housing and if live in Austria or Germany. The coefficients of the model are presented in Table 8.3.

Table 8.3 Table of regression coefficients of Trust

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	P-value
		B	Std. Error	Beta		
1	(Constant)	5.971	.096		62.290	.000
	Gender	-.147	.107	-.012	-1.370	.171
	Marital status	-.377	.249	-.013	-1.513	.130
	Education	.412	.113	.032	3.661	.000
	Housing	-.535	.178	-.027	-3.005	.003
	Health	-.699	.126	-.048	-5.540	.000
	Living in Austria and Germany	-.672	.125	-.047	-5.392	.000

a. Dependent Variable: Q23 Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people? Please use a scale from 1 to 10, where [1] means that 'you can't be too careful' and [10] means that 'most people can be trust

This model did not explain well the variation in trust across the EU15 countries having an adjusted R^2 value of only 8%. However, it did confirm that living in social housing, not being in good health and living in Austria or Germany were all significantly associated with lower levels of general trust. Additionally, it was confirmed that the higher the level of academic qualifications the higher the levels of trust.

Conclusion

This analysis of the data available through this research questionnaire shows that for modeling trust in an intra-organisational context the organisational structure, education, occupation, nationality and age of respondents should be considered as factors. These findings shape the data collection to be conducted in the case investigations and motivates the need to examine by case investigations both a private and a public sector organisation.

A.2 Detailed Interviews in Zimmer GmbH Study

One simple questions was asked where people had the option to respond in writing or orally. The interview style was chosen wherever possible to safeguard correct interpretation of the question. It guaranteed faster response times and it did make things less vulnerable for participants.

The interviews were conducted randomly within 15 June and 29 June 2012 informally. The question was only directed to Management Accountants.

The question asked was:

"Generally speaking would you agree that strong social networks are important for you to be able to do a good job as a Management Accountant?"

Because of interpretation difficulties the question was explained to the participants when there was lack of clarity. The interviewer also asked questions proactively to ensure that the interviewee understood the meaning of the question as clearly as possible.

The breakdown of the question into sub-questions was not attempted for reasons of complexity.

In this interview approach, only the people who have participated in the questionnaire were interviewed.

Additionally, others who were not working in Zimmer GmbH and / or not participating the original questionnaire are indicated respectively.

"I believe that social networks are important to do my job as accountant. Without anybody to talk to I would not receive information on a timely basis. Formal information channels cannot replace completely informal ways of communication in Finance.

The information flows need to be working to make good analysis."

Kirkheart (anonymised – did not participate in the questionnaire part) Management Accountant at Zimmer GmbH

"There were companies already going bankrupt because their Top-Management decided to sell the coffee machine. Flow of information and opportunities to share information is extremely important."

Phlox (anonymised) Management Accountant at Zimmer GmbH

"I gain a positive mood when I interact with my colleagues. It clearly influences my workstyle and my motivation.

I would still do my work anyway, so I am not sure whether company performance is directly so strongly affected, there are so many other factors but it makes things easier."

Mezoti (anonymised) Management Accountant at Zimmer GmbH

"Networks help sometimes people to move up the internal hierarchy quicker than others. But this is not always the best for the organization. Networks which are too strong can be also bad for performance. But usually it is the key to get work done and get to know people who can support me in my work.

Networks definitely protect me and I am careful not to hurt my own network."

Colt (anonymised) Management Accountant at Zimmer GmbH

"Accountants in general are not "value creators" in a classical sense they only help to allocate resources to the places where they can create value. In Zimmer the influence of executives and from the Headquarter in the USA on resource allocation decisions is very strong in Zimmer GmbH Winterthur. Because of this Accountants in Winterthur have to be very diplomatic and try to find compromises between people of different departments and amongst other accountants to be successful. Therefore, I believe Accountants have to foster networks between cost center managers and the leadership and the USA to be successful."

Neelix (anonymised) Management Accountant at Zimmer GmbH

"Having worked in Finance in Zimmer GmbH for many years I received the impression that my connections to my colleagues in other departments are very crucial in Zimmer to do my work. We have no hierarchical structure compared to other companies. It is very functional and matrix like here. We do what we have to do and involve the best fitting people in our projects. When there is a win/win situation we cross departmental lines very often. For Win / Lose situations we try to find a mutual agreement – usually such situations are only temporary and in the long term it balances."

Mayweather (anonymised) Management Accountant at Zimmer GmbH

"I believe that networks are overestimated. In Zimmer I do what my boss asks me and what my job requires me to do. If my work involves other colleagues I contact the people responsible and ask for support. Then I always receive the support I ask for. We have a good relationship but it is

not like, that I have the freedom to decide what I ask them to deliver and what I can refuse to deliver to them. There is a job to be done and that is what I and the others around me are focusing on. We want to do our work well. The connections help me to make me happier and respect for my work I deliver is important to me but I am not sure that it increases my performance. Perhaps the networks in Zimmer are already very solid and good and so I do not miss anything."

Martok (anonymised) Management Accountant at Zimmer GmbH

"The Cost Center Managers and I have a very good relationship. I believe that this helps to make the best reports to Management. If I would not know my Managers I would have to start from the beginning with my work. It would be very tiring to for both sides. So I think it is good to know each other over a long period of time. Things become easier to solve because you know what the others do and they know what you do."

Chakotay (anonymised) Management Accountant at Zimmer GmbH

A.3 Questionnaire Zimmer GmbH

A.3.1 Questionnaire for Line Managers

Questionnaire for Line Managers - The role of trust in Management

1. Confidentiality

This questionnaire is from Edinburgh Napier University. The evaluation is being conducted by Johannes K. Muehl and Prof. Robert Raeside to improve the general understanding of the role of trust in Management Accounting and is also the basis of Johannes Muehl's doctoral dissertation.

Any identifiable information in regard to your name or other criteria which would make you identifiable will not be published, not listed in journals or the dissertation.
These information will not be provided to the management of your company or any other person.

Your personal information are only used to compile numeric tables and are going to be deleted after the research will have been completed.

The information you provide will be evaluated and published on an aggregated level or if individualised made completely anonymously and unidentifiable.

Thus your company will receive a feedback from this questionnaire based on numerous inputs putting you at no risk of being identified.

You are helping to create more awareness of the interaction of control and trust in finance!

Questionnaire for Line Managers - The role of trust in Management

2. Formation of executives

Please provide us with maxium two executives (Vice presidents, Executive-Directors, CEO, CFO etc.) you mostly contact?

Surname and Name of executive

Surname and Name of executive

Questionnaire for Line Managers - The role of trust in Management

3. Formation of executives

What are their job titles?

[Q1]

[Q2]

Questionnaire for Line Managers – The role of trust in Management

4. Formation of executives

All personal identifiable information data are kept completely confidential and used only for creating numeric tables and matrixes. Subsequently, all personal data will be deleted once research has been completed.

How often do you contact your executives?

	by phone, mail or other ways for private & business reasons?	How many years have you known them?	How often do you contact them for reasons of friendship and social enjoyment?	How often do you contact them for information or advice of getting a task done?	How often do you contact them for information on career guidance and opportunities?
[Q1]					
[Q2]					

Questionnaire for Line Managers – The role of trust in Management

5. Formation of Management Accountants

Please provide us with maximum four Management Accountants (Controllers) you mostly contact?

Surname and Name of Management Accountant

Surname and Name of Management Accountant

Surname and Name of Management Accountant

Surname and Name of Management Accountant

Questionnaire for Line Managers – The role of trust in Management

6. Formation of Management Accountants

What are their job titles?

[Q5]

[Q6]

[Q7]

[Q8]

Questionnaire for Line Managers - The role of trust in Management

7. Formation of Management Accountants

All personal identifiable information data are kept completely confidential and used only for creating numeric tables and matrixes. Subsequently, all personal data will be deleted once research has been completed.

How often do you contact your Management Accountants?

	by phone, mail or other ways for private & business reasons?	How many years have you known them?	How often do you contact them for reasons of friendship and social enjoyment?	How often do you contact them for information or advice of getting a task done?	How often do you contact them for information on career guidance and opportunities?
[Q5]					
[Q6]					
[Q7]					
[Q8]					

Questionnaire for Line Managers - The role of trust in Management

8. Formation of Line Managers

Please provide us with maximum four Line Managers (e.g. Cost Center heads, Communication managers, IT managers, Research and Development Managers, Marketing managers, Sales managers etc.) you mostly contact?

Surname and Name of Line Manager

Surname and Name of Line Manager

Surname and Name of Line Manager

Surname and Name of Line Manager

Questionnaire for Line Managers - The role of trust in Management

9. Formation of Line Managers

What are their job titles?

[Q11]

[Q12]

[Q13]

[Q14]

Questionnaire for Line Managers – The role of trust in Management

10. Formation of Line Managers

All personal identifiable information data are kept completely confidential and used only for creating numeric tables and matrixes. Subsequently, all personal data will be deleted once research has been completed.

How often do you contact your Line Managers?

	by phone, mail or other ways for private & business reasons?	How many years have you known them?	How often do you contact them for reasons of friendship and social enjoyment?	How often do you contact them for information or advice of getting a task done?	How often do you contact them for information on career guidance and opportunities?
[Q11]	▾	▾	▾	▾	▾
[Q12]	▾	▾	▾	▾	▾
[Q13]	▾	▾	▾	▾	▾
[Q14]	▾	▾	▾	▾	▾

Questionnaire for Line Managers – The role of trust in Management

11. Trust Dimensions Management Accountants

Let us know what you think about the Management Accountants?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My needs and desires in my job are very important to Management Accountants.	○	○	○	○	○
I can count on the Management Accountants to help me if I have difficulties with my job or decision making.	○	○	○	○	○
Management Accountants are open and up front with me.	○	○	○	○	○
Management Accountants really look out for what is important to their Line Managers.	○	○	○	○	○
Management Accountants have a lot of knowledge about the work that needs to be done.	○	○	○	○	○
Management Accountants are known to be successful at the things they attempt to accomplish.	○	○	○	○	○
If I make a mistake the Management Accountants are willing to 'forgive and forget.'	○	○	○	○	○
It is best not to share information with the Management Accountants.	○	○	○	○	○

Questionnaire for Line Managers – The role of trust in Management

12. Cognitive / affective based trust

Let us know about the type of relation to your Management Accountants?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Management Accountants are demonstrating competency to diagnose and manage your problems	○	○	○	○	○
Management Accountants greet you warmly, being friendly, never crabby or rude	○	○	○	○	○
Management Accountants are encouraging you and checking on your progress	○	○	○	○	○
Referring to a specialist when needed; readily admitting if he/she doesn't know something	○	○	○	○	○

Questionnaire for Line Managers – The role of trust in Management

13. Impacts and Culture

Let us know whether you aggree or disaggree to the statements below about Impacts of trust?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Good relation to your Management Accountants provides more access to resources, information and / or funds for your department	○	○	○	○	○
Management Accountants support us to make decisions	○	○	○	○	○
Good relations between Line Managers and Management Accountants help to control your business	○	○	○	○	○
Management Accountants enable you with good information to suggest (or make) changes.	○	○	○	○	○

14. Characteristics

Tit for Tat or commitment (basics of game theory)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think that things done for others should be rewarded quickly.	○	○	○	○	○
I think that things done for others should finally be compensated one day.	○	○	○	○	○
I think that somebody who has helped others should not necessarily be compensated.	○	○	○	○	○

15. Organisational Tensions

Rate the organisational Tensions?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Organisational tensions between Management Accountants and Line Managers are strong.	○	○	○	○	○
Management Accountants are too close to Senior Management.	○	○	○	○	○
Management Accountants lack of business understanding.	○	○	○	○	○
It is difficult filling this questionnaire because I am afraid of the consequences.	○	○	○	○	○
I would go on a sporting or social outing privately with Management Accountant(s) in my free time	○	○	○	○	○
I would rely on Management Accountant if they would be willing to calculate the costs for a private investment for example building of my house.	○	○	○	○	○
Management Accountants in general have a negative reputation	○	○	○	○	○
It is more difficult to work with people with different backgrounds (such as different nationality, religion, political views, etc.)	○	○	○	○	○

Questionnaire for Line Managers - The role of trust in Management

16. State of the company

Personal Trust - please tell me on a score of "1" to "5", where "1" means you can't be too carefull and "5" means that most people can be trusted.

	1 - You can't be too careful	2	3	4	5 - Most people can be trusted	88 - (Don't know)
Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	○	○	○	○	○	○

Questionnaire for Line Managers - The role of trust in Management

17. State of the company

Satisfaction with working environment

	No	Sometimes	its generally okay	mostly	very much
Do you enjoy working for the company?	○	○	○	○	○

Success of company

	Not at all	weak	okay	good	very successful
Given the market conditions would you consider your company to be successful?	○	○	○	○	○

18. Control vs. Trust or both

Control vs. Trust tell us what you believe is better?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Strict control is better than being dependent informally on others in the company for the success of the business.	○	○	○	○	○
Clear descriptions and written documents (including emails) are better for the success of the business than more informal ways of communication	○	○	○	○	○
My colleagues in general share important personal information with me	○	○	○	○	○
My colleagues in general share important company information with me	○	○	○	○	○
Bringing control to a company can be achieved by hiring competent and reliable people	○	○	○	○	○
To bring control to a company independent people are important	○	○	○	○	○

Questionnaire for Line Managers - The role of trust in Management

19. Characteristics

And finally we require some information about you!

Your name and surname is...

[   ]

Your gender is...

○ ...male
○ ...female

Questionnaire for Line Managers – The role of trust in Management

20. Characteristics

Your age is...

- ○ ...25-34
- ○ ...35-44
- ○ ...45-54
- ○ ...55-59
- ○ ...60+

your native language is...

- ○ ...Arabian
- ○ ...Chinese (Mandarin, Cantonese and local dialects)
- ○ ...English
- ○ ...French
- ○ ...German
- ○ ...Hindi, Urdu, Bangla. etc.
- ○ ...Italian
- ○ ...Polish
- ○ ...Portugese
- ○ ...Russian
- ○ ...Spanish
- ○ ...Turkish

...other - please specify

Questionnaire for Line Managers – The role of trust in Management

21. Characteristics

your education is...

- ☐ ...Apprenticeship
- ☐ ...Bachelor or equivalent (VWA, Diploma)
- ☐ ...Master or equivalent (Diploma)
- ☐ ...Professional accounting qualifications (CFA, CPA, ACCA, gepr. Bilanzbuchhalter, CIMA etc.)
- ☐ ...Executive MBA
- ☐ ...PhD or equivalent

...other - please specify

Questionnaire for Line Managers - The role of trust in Management

22. Characteristics

your years of professional experience are...

○ ...0-5

○ ...6-10

○ ...10-20

○ ...20-30

○ ...+30

your marital status...

○ ...married or equivalent such as registered partnership etc.

○ ...single never married

○ ...divorced

○ ...widowed

○ ...wish not to mention

Questionnaire for Line Managers - The role of trust in Management

23. Comments

Any comments and concerns about the questionnaire?

A.3.2 Questionnaire of Management Accountants

Questionnaire for Management Accountants - The role of trust in

1. Confidentiality

This questionnaire is from Edinburgh Napier University. The evaluation is being conducted by Johannes K. Muehl and Prof. Robert Raeside to improve the general understanding of the role of trust in Management Accounting and is also the basis of Johannes Muehl's doctoral dissertation.

Any identifiable information in regard to your name or other criteria which would make you identifiable will not be published, not listed in journals or the dissertation.
These information will not be provided to the management of your company or any other person.

Your personal information are only used to compile numeric tables and are going to be deleted after the research will have been completed.

The information you provide will be evaluated and published on an aggregated level or if individualised made completely anonymously and unidentifiable.

Thus your company will receive a feedback from this questionnaire based on numerous inputs putting you at no risk of being identified.

You are helping to create more awareness of the interaction of control and trust in finance!

Questionnaire for Management Accountants - The role of trust in

2. Formation of executives

Please provide us with maxium two executives (Vice presidents, Executive-Directors, CEO, CFO etc.) you mostly contact?

Surname and Name of executive

Surname and Name of executive

Questionnaire for Management Accountants - The role of trust in

3. Formation of executives

All personal identifiable information data are kept completely confidential and used only for creating numeric tables and matrixes. Subsequently, all personal data will be deleted once research has been completed.

How often do you contact your executives?

	by phone, mail or other ways for private & business reasons?	How many years have you known them?	How often do you contact them for reasons of friendship and social enjoyment?	How often do you contact them for information or advice of getting a task done?	How often do you contact them for information on career guidance and opportunities?
[Q1]					
[Q2]					

Questionnaire for Management Accountants - The role of trust in

4. Formation of Management Accountants

Please provide us with maximum four Management Accountants (Controllers) you mostly contact?

Surname and Name of Management Accountant

Surname and Name of Management Accountant

Surname and Name of Management Accountant

Surname and Name of Management Accountant

Questionnaire for Management Accountants - The role of trust in

5. Formation of Management Accountants

All personal identifiable information data are kept completely confidential and used only for creating numeric tables and matrixes. Subsequently, all personal data will be deleted once research has been completed.

How often do you contact your Management Accountants?

	by phone, mail or other ways for private & business reasons?	How many years have you known them?	How often do you contact them for reasons of friendship and social enjoyment?	How often do you contact them for information or advice of getting a task done?	How often do you contact them for information on career guidance and opportunities?
[Q4]					
[Q5]					
[Q6]					
[Q7]					

Questionnaire for Management Accountants - The role of trust in

6. Formation of Line Managers

Please provide us with maximum four Line Managers (e.g. Cost Center heads, Communication managers, IT managers, Research and Development Managers, Marketing managers, Sales managers etc.) you mostly contact?

Surname and Name of Line Manager

Surname and Name of Line Manager

Surname and Name of Line Manager

Surname and Name of Line Manager

7. Formation of Line Managers

All personal identifiable information data are kept completely confidential and used only for creating numeric tables and matrixes. Subsequently, all personal data will be deleted once research has been completed.

How often do you contact your Line Managers?

	by phone, mail or other ways for private & business reasons?	How many years have you known them?	How often do you contact them for reasons of friendship and social enjoyment?	How often do you contact them for information or advice of getting a task done?	How often do you contact them for information on career guidance and opportunities?
[Q9]					
[Q10]					
[Q11]					
[Q12]					

8. Trust Dimensions Line Managers

Let us know what you think about your Line Managers?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
My needs and desires in my job are very important to Line Managers.	○	○	○	○	○
I can count on the Line Managers to help me if I have difficulties with my job or decision making.	○	○	○	○	○
Line Managers are open and up front with me.	○	○	○	○	○
Line Managers really look out for what is important to their Management Accountants.	○	○	○	○	○
Line Managers have a lot of knowledge about the work that needs to be done.	○	○	○	○	○
Line Managers are known to be successful at the things they attempt to accomplish.	○	○	○	○	○
If I make a mistake line managers are willing to 'forgive and forget.'	○	○	○	○	○
It is best not to share information with the Line managers.	○	○	○	○	○

9. Cognitive / affective based trust

Let us know about the type of relation to your Line Managers?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Line Managers greet you warmly, being friendly, never crabby or rude	○	○	○	○	○
Line Managers are encouraging you and checking on your progress	○	○	○	○	○
Line Managers are demonstrating competency to diagnose and manage your problems	○	○	○	○	○
Referring to a specialist when needed; readily admitting if he/she doesn't know something	○	○	○	○	○

10. Impacts and culture

Let us know whether you agree or disagree to the statements below about Impacts of trust?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Good relation to Line Management provides more access to information.	○	○	○	○	○
Line Managers support us with information to provide them with guidance.	○	○	○	○	○
Good relations between Line Managers and Management Accountants help to control your business.	○	○	○	○	○
Line Management enables you with good information to suggest (or make) changes.	○	○	○	○	○

11. Characteristics

Tit for Tat or commitment (basics of game theory)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think that things done for others should be rewarded quickly.	○	○	○	○	○
I think that things done for others should finally be compensated one day.	○	○	○	○	○
I think that somebody who has helped others should not necessarily be compensated.	○	○	○	○	○

12. Organisational Tensions

Rate the organisational Tensions?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Organisational tensions between Management Accountants and Line Managers are strong.	○	○	○	○	○
Line Managers are too close to Senior Management.	○	○	○	○	○
Line Managers lack of financial understanding.	○	○	○	○	○
It is difficult filling this questionnaire because I am afraid of the consequences.	○	○	○	○	○
I would go on a sporting or social outing privately with Line Managers or Senior Managers in my free time	○	○	○	○	○
I would rely on Line Managers if they would be willing to provide me with advice for example building of my house.	○	○	○	○	○
Line Managers in general have a negative reputation	○	○	○	○	○
It is more difficult to work with people with different backgrounds (such as different nationality, religion, political views, etc.)	○	○	○	○	○

Questionnaire for Management Accountants – The role of trust in

13. State of the company

Personal Trust - please tell me on a score of "1" to "5", where "1" means you can't be too carefull and "5" means that most people can be trusted.

	1 - You can't be too careful	2	3	4	5 - Most people can be trusted	88 - (Don't know)
Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	○	○	○	○	○	○

Questionnaire for Management Accountants – The role of trust in

14. State of the company

Satisfaction with working environment

	No	Sometimes	its generally okay	mostly	very much
Do you enjoy working for the company?	○	○	○	○	○

Success of company

	Not at all	weak	okay	good	very successful
Given the market conditions would you consider your company to be successful?	○	○	○	○	○

Questionnaire for Management Accountants – The role of trust in

15. Control vs. Trust or both

Control vs. Trust tell us what you believe is better?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Strict control is better than being dependent informally on others in the company for the success of the business.	○	○	○	○	○
Clear descriptions and written documents (including emails) are better for the success of the business than more informal ways of communication	○	○	○	○	○
My colleagues in general share important personal information with me	○	○	○	○	○
My colleagues in general share important company information with me	○	○	○	○	○
Bringing control to a company can be achieved by hiring competent and reliable people	○	○	○	○	○
To bring control to a company independent people are important	○	○	○	○	○

Questionnaire for Management Accountants - The role of trust in

16. Characteristics

Your name and surname is...

[   ]

Questionnaire for Management Accountants - The role of trust in

17. Comments

Any comments and concerns about the questionnaire?

[   ]

A.4 Questionnaire Furtwangen University

A.4.1 Questionnaire for Professors

Questionnaire for Professors – The role of trust in public organisations

1. Confidentiality

This questionnaire is from Edinburgh Napier University. The evaluation is being conducted by Johannes K. Muehl and Prof. Robert Raeside to improve the general understanding of the role of trust in public organisations and is also the basis of Johannes Muehl's doctoral dissertation.

The information you provide will be evaluated and published on an aggregated level and you are anonymous and unidentifiable.

The participation of Furtwangen University was approved by the dean-assembly and the rectorate.

You are helping to create more awareness of the interaction of administration control and trust in public organisations!

Questionnaire for Professors – The role of trust in public organisations

2. Strength of Network

How many Deans are you in contact with for private and business purposes (by phone, mail or other ways)?

Deans

How many Professors are you in contact with for private and business purposes (by phone, mail or other ways)?

Professors

Questionnaire for Professors – The role of trust in public organisations

3. Trust Dimensions

Let us know what you think about the Deans?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Needs and desires of Professors are very important to Deans.	○	○	○	○	○
Deans have a lot of knowledge about their work area.	○	○	○	○	○
Deans are open and up front.	○	○	○	○	○

Questionnaire for Professors - The role of trust in public organisations

4. Cognitive / affective based trust

Let us know about the type of relation to your Deans?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Deans are encouraging you and providing support if needed.	○	○	○	○	○
Referring to a specialist when needed; readily admitting if he/she doesn't know something.	○	○	○	○	○

Questionnaire for Professors - The role of trust in public organisations

5. Impacts and Culture

Let us know whether you aggree or disaggree to the statements below about Impacts of trust?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Good relation to your Deans provides more access to resources, information and / or funds for your department or research area.	○	○	○	○	○
Good relations between Professors and Deans help to control your administration.	○	○	○	○	○

Questionnaire for Professors - The role of trust in public organisations

6. Characteristics

Tit for Tat or commitment (basics of game theory)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think that things done for others should be rewarded quickly.	○	○	○	○	○
I think that things done for others should finally be compensated one day.	○	○	○	○	○
I think that somebody who has helped others should not necessarily be compensated.	○	○	○	○	○

Questionnaire for Professors – The role of trust in public organisations

7. Organisational Tensions

Rate the organisational Tensions?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Organisational tensions between Deans and Professors are strong.	○	○	○	○	○
Deans lack of understanding of my work and research area.	○	○	○	○	○
I would go on a sporting or social outing privately with Deans in my free time.	○	○	○	○	○

Personal Trust - please tell me on a score of "1" to "5", where "1" means you can't be too carefull and "5" means that most people can be trusted.

	1 - You can't be too careful	2	3	4	5 - Most people can be trusted	88 - (Don't know)
Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	○	○	○	○	○	○

Questionnaire for Professors – The role of trust in public organisations

8. State of the University

Satisfaction with working environment

	No	Sometimes	its generally okay	mostly	very much
Do you enjoy working for the university?	○	○	○	○	○

Success of University

	Not at all	weak	okay	good	very successful
Given the competition with other universities would you consider the university to be successful (e.g. university rankings, employability of their graduates on the job market)?	○	○	○	○	○

Questionnaire for Professors – The role of trust in public organisations

9. Control vs. Trust or both

Control vs. Trust tell us what you believe is better?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Clear descriptions and written documents (including emails) are better for the success of the university than more informal ways of communication.	○	○	○	○	○
To administrate/manage an university independent people are important.	○	○	○	○	○

A.4.2 Questionnaire for Deans

Questionnaire for Deans – The role of trust in public organisations

1. Confidentiality

This questionnaire is from Edinburgh Napier University. The evaluation is being conducted by Johannes K. Muehl and Prof. Robert Raeside to improve the general understanding of the role of trust in public organisations and is also the basis of Johannes Muehl's doctoral dissertation.

The information you provide will be evaluated and published on an aggregated level and you are anonymous and unidentifiable.

The participation of Furtwangen University was approved by the dean-assembly and the rectorate.

You are helping to create more awareness of the interaction of administration control and trust in public organisations!

Questionnaire for Deans – The role of trust in public organisations

2. Strength of Network

How many Deans are you in contact with for private and business purposes (by phone, mail or other ways)?

Deans _____ [▼]

How many Professors are you in contact with for private and business purposes (by phone, mail or other ways)?

Professors _____ [▼]

Questionnaire for Deans – The role of trust in public organisations

3. Trust Dimensions

Let us know what you think about the Professors?

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Needs and desires of Deans are very important to Professors.	○	○	○	○	○
Professors have a lot of knowledge about their work area.	○	○	○	○	○
Professors are open and up front.	○	○	○	○	○

Questionnaire for Deans - The role of trust in public organisations

4. Cognitive / affective based trust

Let us know about the type of relation to your Professors?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Professors are encouraging you and providing support if needed.	○	○	○	○	○
Referring to a specialist when needed; readily admitting if he/she doesn't know something.	○	○	○	○	○

Questionnaire for Deans - The role of trust in public organisations

5. Impacts and Culture

Let us know whether you aggree or disaggree to the statements below about Impacts of trust?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Good relation to your Professors provides more access to information.	○	○	○	○	○
Good relations between Professors and Deans help to control your administration.	○	○	○	○	○

Questionnaire for Deans - The role of trust in public organisations

6. Characteristics

Tit for Tat or commitment (basics of game theory)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I think that things done for others should be rewarded quickly.	○	○	○	○	○
I think that things done for others should finally be compensated one day.	○	○	○	○	○
I think that somebody who has helped others should not necessarily be compensated.	○	○	○	○	○

Questionnaire for Deans – The role of trust in public organisations

7. Organisational Tensions

Rate the organisational Tensions?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Organisational tensions between Deans and Professors are strong.	○	○	○	○	○
Professors lack of understanding of my work and responsibility.	○	○	○	○	○
I would go on a sporting or social outing privately with Professors in my free time.	○	○	○	○	○

Personal Trust - please tell me on a score of "1" to "5", where "1" means you can't be too carefull and "5" means that most people can be trusted.

	1 - You can't be too careful	2	3	4	5 - Most people can be trusted	88 - (Don't know)
Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?	○	○	○	○	○	○

Questionnaire for Deans – The role of trust in public organisations

8. State of the University

Satisfaction with working environment

	No	Sometimes	its generally okay	mostly	very much
Do you enjoy working for the university?	○	○	○	○	○

Success of University

	Not at all	weak	okay	good	very successful
Given the competition with other universities would you consider the university to be successful (e.g. university rankings, employability of their graduates on the job market)?	○	○	○	○	○

Questionnaire for Deans – The role of trust in public organisations

9. Control vs. Trust or both

Control vs. Trust tell us what you believe is better?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Clear descriptions and written documents (including emails) are better for the success of the university than more informal ways of communication.	◯	◯	◯	◯	◯
To administrate/manage an university independent people are important.	◯	◯	◯	◯	◯

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