UNIVERSITY OF GHANA

THE IMPACT OF RISK CULTURE ON UNDERWRITING RISK OF LIFE INSURANCE COMPANIES IN GHANA

BY

AGNES ASARE

(10270594)

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MPHIL RISK MANAGEMENT AND INSURANCE DEGREE

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A THESIS SUBMITTED TO THE DEPARTMNT OF FINANCE, UNIVERSITY OF GHANA BUSINESS SCHOOL, UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF AN MPHIL IN BUSINESS ADMINISTRATION (RISK MANAGEMENT AND INSURANCE OPTION) DEGREE

JULY, 2015

DECLARATION

I do hereby declare that this thesis is original and the result of my own research except those literatures, quotations, explanations and summarization which are duly identified and recognised.

I bear sole responsibility for any shortcomings.

…….. ……

AGNES ASARE DATE

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CERTIFICATION

I hereby certify that this thesis was supervised in accordance with procedures laid down by the University.

....

DR. CHARLES ANDOH DATE

(LEAD SUPERVISOR)

....

DR. ERIC DEI OFOSU-HENE DATE

(CO-SUPERVISOR)

DEDICATION

This work is dedicated to my dad and mum, Benjamin Kwaku Asare and Josephine Ohenewa Asare for their support, both physically and financially throughout the period of my studies.

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Finally, to all those who I may inadvertently have missed out, I say a big thank you to you all.

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ABSTRACT

Purpose _ The purpose of this thesis is to analyse how risk culture influences a firm's risk taking and control decisions (Underwriting risk).

Design/methodology/approach _ A sample of 90 employees from eighteen life insurance companies in Ghana was used in this Study. The different propositions proposed are formulated using exploratory factor analysis and the ordinary least square regression on a cross- sectional basis.

Findings The results obtained show that, excessive controls and checks are in place, which makes firm conservative in risk taking and make workers risk averse in transacting business. Also risk awareness and education is not sufficiently promoted which could affect workers orientation to risk management. In addition, incentives are inadequate to influence workers attitude positively from going beyond rules and regulations to be obeyed.

Value/originality_ Risk culture is seen as an important driver of the effectiveness of a risk management framework**.** The study also provided new empirical evidence on the influence of risk culture variables (i.e. formality, risk perception, risk focus and decision making) on firm's risk taking and control decisions (underwriting risk).

Keywords: Risk culture, Organisational culture, risk management, underwriting risk.

CHAPTER ONE

INTRODUCTION

1.1Background of the study

COSO (2004) argues that managers foster a control environment by setting the tone at the top. In this context, the control environment serves as a boundary of last resort in case the formal risk management system fails. However, such an understanding limits culture to a static boundary parameter and thereby neglects the dynamic interaction between the formal risk management framework and an organisation's or subunit's culture. Risk culture has emerged as something of a hot topic since the banking crisis, resulting in major regulatory initiatives across financial services, such as Solvency II in insurance (CII, 2013). It would seem that, for the insurance sector especially, risk culture and risk management has become a major compliance activity. But is this where corporate risk management should reside? In the search for lessons from the financial crisis, much attention has been paid to problems of culture within financial organisations, and to 'risk culture' in particular (Ashby, 2011; Ashby, Palermo & Power, 2012; Bozeman & Kingsley, 1998).

For all the post-mortems into the financial crisis, as well as more recent crises such as the LIBOR scandal it is apparent that both financial institutions and their regulators remain unsure about what risk culture is, or how to manage it effectively (Stulz, 2013).

Put simply, 'risk culture' can be understood as an organisation's propensity to take risks as perceived by the managers in the organisation (Boseman & Kingsley 1998). Risk culture is the values, beliefs, knowledge and understanding about risk shared by a group of people with a common purpose, in particular the employees of an organisation or of teams or groups within an

organisation (IRM, 2012). How risk is defined and understood has a profound impact on how risk is managed. In order to successfully manage risks one must understand what is being managed. While various definitions of culture exist, this research is focusing on the institution's norms, attitudes and behaviours related to risk awareness, risk taking and risk management, or the institution's risk culture (IIF, 2009).

Underwriting risk is a way to set standards for accepting individual insureds based on the risk each contributes to the insurer's portfolio. For the insurer to stay in business, it has to have sufficient capital to keep this risk below an acceptable level. This paper is about linking the insurer' s risk management framework with the myriad of individual underwriting and pricing decisions it makes as it goes about its business (Meyers, 2001).

A sound risk culture consistently supports appropriate risk awareness, behaviours and judgements about risk-taking within a strong risk governance framework. A sound risk culture bolsters effective risk management, promotes sound risk-taking, and ensures that emerging risks or risk-taking activities beyond the institution's risk appetite are recognized, assessed, escalated and addressed in a timely manner (PWC, 2014). A sound risk culture should emphasize the quality of risk models, data accuracy, capability of available tools to accurately measure risks, and justifications for risk taking can be challenged, and all limit breaches, deviations from established policies, and operational incidents are thoroughly followed up with proportionate disciplinary actions when necessary (PWC, 2014).

The culture of an organisation has a bearing on the ultimate success or failure of a corporation. The need to understand, measure and enhance the risk culture of organizations in the financial services sector is increasing. National and international regulators are placing greater emphasis

on companies' ability to demonstrate that they have an effective risk management culture (Ashby et al., 2012).

The failure to articulate and integrate purpose, values and principles within a functioning ethical framework created or aggravated toxic and socially harmful risk cultures, both in Australia and elsewhere (Power et al., 2012).

From catastrophic collapses such as Lehman Brothers and the collapse of once storied brands such as Merrill Lynch in the United States, through forced de facto nationalisations in the United Kingdom of major banks such as Royal Bank of Scotland and Halifax Bank of Scotland, these cultures raised mechanical compliance over substance. Ethical obligation was almost always explicitly stated but its precise content often unspecified and, where specified, frequently ignored or justified by other allegedly more pressing considerations, such as short-term financial ones. Compliance with ethical obligations too often reduced to pious noises about values and an alleged commitment to the highest standards of behavior; in short, window-dressing.

It is clear from the above that weaknesses in the risk culture of certain organisations contributed to the most recent financial crisis in 2008 and it continues to cause high-profile problems in the financial sector.

Risk culture can be defined as individual and group behaviour within an organization that determines the way in which the company identifies, understands, discusses and acts on the risks the organization confronts and takes (Institute of International Finance, 2009).

The definition brings a number of vital features that are worth noting. Firstly, there must be a systematic method to dealing with risk. Secondly, the culture should be visible in both the organisational values as well as behaviours across the entire organisation, in other words in

the system of beliefs and the manner in which people go about business. Lastly, it should reinforce the risk taking and management processes. Survey of risk managers found that virtually most articles are silent on culture, logistical and challenges that confront organisations, many of these articles describe how the process should look like and function but do not give details of how to get to the steps (Fraser et al., 2010). There was a distinct information deficiency on how to link all the silos together and also the impact of risk culture on performance is not well addressed in literature. Risk cultures do not exist in a vacuum; nor are they mere reactive responses to externally mandated rules; instead they reflect the values of the organisation. As we have seen, repeatedly, culture is crucial (Ashby et al., 2012; Stulz, 2008). Moreover, both culture and structure are ultimately to be determined in the light of institutional purpose. In short, critical to successful risk culture of the financial system is the extent to which it addresses the behaviour of market participants and their conception of what constitutes acceptable conduct. This goes far beyond legal obligation. It cannot be achieved without an emphasis on the cultural dimension (Power, 2008; Stulz, 2003).

The Insurance industry has the potential to contribute significantly to national well-being through the effective and responsible stewardship of savings and investments. In order to do so, it must conduct its affairs within an overarching framework capable of securing societal consent and support. Therefore an appropriate risk cultural practice that enhances proper risk management programs will add value to the business and improve their capital adequacy that is required by both regulatory agencies and real world considerations, consequently, leading to sustained competitive advantage.

1.2 Problem statement

Much of the comments and investigation about the actions of financial organisations, from the worldwide financial crisis to events such as product mis-selling, rogue trading and the latest LIBOR scandal, share a mutual and important focus. It is debated that these problems arose because of flaws in the cultures of banks and other financial institutions (BOFIs). Yet, regardless of near universal agreement that this problem is at the center of things, relatively little has been done by practitioners, regulators or academics, to explore how the cultures of banking & other financial institutes impact on risk taking and control decision. The financial crisis which crystallised in the late 2000's elevates the importance of risk culture (Ashby, 2011; Ashby, Palermo & Power, 2012; Bozeman & Kingsley, 1998). In the wake of the global financial crisis; calls to address the culture of the financial sector have been accompanied by a distinct lack of detail on the specifics.

The first and the most profound question in risk management is what is risk? How risk is defined and understood has a profound impact on how risk is managed. In order to successfully manage risks one must understand what is being managed. Unfortunately risk can be defined in many and often conflicting ways. It is possible and even likely that risk is defined in different ways by different groups within an organization, especially if there is no formally stated and commonly accepted definition. My core point is that, just as any revolution eats its children; weak risk culture can devour the financial strength essential for the long-term dynamism of stability of financial institution of which insurance is a part of and then further strained trust and confidence in the financial system.

1.3 Research purpose

The research purpose looks at how the risk culture of the insurance firms influences its risk management practices particularly in their underwriting of contracts.

1.4 Gaps and contribution

One contribution of my study is to provide empirical findings of risk culture in a developing economy outside the U.S. and European financial institutions. Finally, this paper contributes to literature by examining how risk culture variables impact on underwriting risk i.e. a firms risk taking and control decisions.

1.5 Research objectives

The objective of the study is to:

- Find out if adequate controls and checks are in place to identify potential violations of rules and procedures in transacting business.
- Find out if risk awareness and education is sufficiently promoted across an organisation.
- Find out if risk assessment is key to business decisions in an organization.
- Determine how risk culture variables impact on underwriting risk.

Following from the research objectives mentioned above the hypothesis listed below were tested.

i. H_0: Adequate controls and checks are not in Place.

   H_A: Adequate controls and checks are in place.

ii. H_0: Risk awareness and education is not sufficiently promoted.

   H_A: Risk awareness and education is sufficiently promoted.

1.6 Research questions

- Are adequate controls and checks in place to identify potential violations in business transactions?
- Is risk awareness and education sufficiently promoted across an organization?
- Is risk assessment key to business decisions?
- How do risk culture variables impact on underwriting risk?

1.7 Significance of research

This research is likely to benefit or contribute immensely to the success of the following:

Policy: The research will help associations, groups, institutes and regulatory bodies to know the nature of risk culture of the insurance industry in Ghana. This will help these bodies in formulating policies that will govern the services rendered to the general public. This research will also help the policy makers to review existing policies which are old and non-applicable in this transient economy the insurance firms find themselves in.

Practice: Insurance firms in Ghana will gain insights about the scope of emerging trends and challenges in the industry. In addition, the insurance firms are likely to use this research as a reference document for their daily activities of rendering quality services to their clients.

Academia: The findings will serve as a reference point for students and researchers in this area or other related areas of study since there are little or no research papers in Ghana so far on this area of study.

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1.8 Chapter disposition

The rest of this thesis is arranged in the following manner.

Chapter two reviews literature on risk, individual risk perception, organizational aspects, risk culture and risk management. It is structured as follows section one look at different definitions of risk and how people see and understand risk, the second section looks at individual aspects and organizational aspects of risk culture.

Chapter three discusses issues relating to the research methodology (research approach, strategy, data collection and data analysis techniques) the study employed to achieve its objectives.

Chapter four presents and discusses the findings of this study. This chapter considers the views expressed by the research participants on risk culture and risk management choices and other themes relating to decision making.

Chapter five summaries the findings and discussions of this study. Finally, it reflects on the dimensions of risk culture and highlights areas for future research in risk culture.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The study established the influence of risk culture on firm underwriting risk in the life insurance companies in Ghana. This chapter concerns issues, concepts, themes, and models analyzed by previous researchers in the area of cultural theory of risk in firm risk taking and control decisions in order to make inferences, deductions and also draw conclusions to contribute to knowledge and also form some basis for empirical studies.

2.2 Overview of underwriting risk

Insurance companies are financial institutions with financial objectives. This thesis is about linking the insurer's risk culture with the myriad of individual underwriting and pricing decisions it makes as it goes about its business. The income of insurers is derived from two principal sources: the underwriting profit from its insurance operations; and the investment income from the assets underlying its reserves and its capital. Quite often, the underwriting profit is negative (Meyers, 2001). More generally, the insurer's income is the result of numerous underwriting decisions made by employees of the insurer. Each decision embroils a consideration of the expected underwriting profit, the length of time that the reserve must be held, and the additional capital needed to protect the insurer' s solvency, which are all culturally intertwined. Ultimately, the insurer must make individual underwriting decisions that contribute, in an actuarial sense, to its overall financial objectives and in the long run these decisions must affect their risk management framework.

In a competitive insurance market, insurers have limited influence on the premium charged for

an insurance contract. They must decide whether or not to compete at the market price.

From policyholder's standpoint, the only risk that matters is insurer insolvency. For the insurer to stay in business, it has to have sufficient capital to keep this risk below an acceptable level. Also, investors demand an acceptable return on this capital. The problem is that the return comes from premiums that are charged to individual insureds, each with their own risk characteristics. Each underwriting decision involves balancing the insurer's desire to earn premium with the insurer's ability to cover claims and remain in compliance with regulatory financial requirements while making a profit.

2.2.1Functions of Underwriting

Underwriting involves examining application forms, supporting documents such as appraisals or bills that verify the value of property, or medical reports that verify the health condition of an individual, looking at insurance maps that provide information relevant to the statistical possibility of certain types of loss, reviewing statistical data applicable to the risk to be insured, reviewing company records regarding the application and evaluating site inspection reports.

Upon a thorough examination of all the data, underwriters then assign rates to the application, or decline to issue a policy if it does not meet underwriting standards. During the entire process, the underwriting department frequently communicates with agents, inspectors, adjusters and other field personnel.

2.2.2 Underwriting Decisions

When evaluating applicants, underwriters determine whether insurance on the applicant will be:

- rejected;
- issued on a substandard basis;
- issued on a standard basis; or
- issued on a preferred basis.

I. Rejecting Applicants

Insurers reject applications for insurance when they find that the applicant represents a risk that falls outside of the underwriting standards established by the insurance company. These underwriting standards take into consideration many items, such as regulations that require the insurer to establish adequate rates, laws that mandate that certain factors cannot be used to reject an application, insurance principles such as insurability and indemnity, the marketplace in which the insurer sells its products and the profit the insurer hopes to make on its business.

II. Issuing Policies on a Substandard Basis

The decision to issue a policy on a substandard basis occurs when a risk is not deemed to be outside underwriting standards, but is considered to be of high risk within those standards. The insurer generally has three basic options when it offers a substandard policy issue to an applicant. It may:

a. issue the policy with a higher premium than would be required for a standard policy

b. issue the policy with limited benefits

c. issue the policy with certain exclusions

III. Issuing Policies on a Standard Basis

Underwriters base their determination that a policy should be issued on a standard basis on an analysis of the characteristics of the risk represented by the applicant. Applicants who are issued policies with standard rates fall within the normal boundaries of underwriting standards for that type of policies

IV. Issuing Policies on a Preferred Basis

If an application falls within the lowest risk boundaries of the underwriting standards, the policy is issued on a preferred basis. Preferred rates represent the lowest rates offered by an insurer for its coverage. Rates offered on a preferred basis must adhere to the insurance regulations

applicable to them, just as rates offered on a substandard and standard basis must. Insurance regulators do not want insurers to offer rates that are so low that the insurer cannot meet its contractual obligations to pay covered claims.

2.2.3 Underwriting Problems

Insurers are not always the "victim" in the underwriting process, sometimes they are the problem. Years ago, for example, insurers sometimes approved policies on a post claims underwriting basis (now illegal). The company accepted applicants with little or no real underwriting, but when individuals attempted to file claims, the company engaged in vigorous investigations of the individual's application in an attempt to demonstrate that he or she did not adequately discloses a certain condition. The company would then rescind the policy instead of paying the claim alleging misrepresentation of a condition on the part of the applicant. The company used a vague or confusing questionnaire to aid in this practice. These tactics were only used by a few less than reputable companies and are now prohibited in most states. There have also been many publicized, criticized and possibly abusive rate increase tactics. In the life industry, for example, insures continually promise they will not raise premiums due to age or health, but that does not guarantee that the premium will stay the same for the entire class. And, it happens more than you think. Lawsuits have been filed in North Dakota and Florida over premiums that have increased as much as 700%, even though the products were promoted as having level premiums. Granted, this is unusual. Rate increases in the 25% to 50% range is more apt to occur. Either way, rate increases especially hurt your customers, especially those on fixed incomes. Since it may take many years for rates to be raised, people who originally bought on non-fixed incomes typically transition to fixed incomes. They are affected too.

2.3 Cultural theory of risk

Risk is an unavoidable part of human and organizational life. It influences how managers and investors make decisions, it follows logically that measuring risk is a critical first step towards managing it. Risk and uncertainty have been part and parcel of human activity since its beginnings, but they have not always been considered as such. For much of recorded time, events with negative consequences were attributed to divine providence or to the supernatural. The responses to risk under these circumstances were prayer, sacrifice (often of innocents) and an acceptance of whatever fate meted out. If the Gods intervened on our behalf, we got positive outcomes and if they did not, we suffered; sacrifice, on the other hand, appeased the spirits that caused bad outcomes. No measure of risk was therefore considered necessary because everything that happened was pre-destined and driven by forces outside our control (Kaspersson, 2008).

From the classical economic theories perspective, it is said that expected utility theory and the prospect theory assume that all people try to act rationally, even though this rationality may be violated unknowingly. That notwithstanding it is assumed that behaviour of all people is more or less alike and preferences that people choose rise from within. The cultural theory proposes that many preferences that people make are due to culture the people choose to or are forced to live within (Wildavsky, 1987).

The main claims of the theory are as follows:

- Everything people do is culturally influenced.
- It is possible to differentiate a limited number of cultural types.
- Cultural types are universal.

Several additional propositions of the theory have been extensively included in other works: social relations and cultural bias must be mutually supportive (compatibility condition), there are only five possible culture types (impossibility theorem) and that each of the five culture types needs to be present in any society at any time (requisite variety condition). The culture types are resistant to change and anything that does not fit expectations are explained away.

The total number of possible cultures has been argued over the years. Some academics asserts that there are only four types while others include also the fifth, autonomous type. This discussion is somewhat academic as the two dimensions and four or five types are also a matter of simplicity and usability of the theory (Douglas, 1999 p. 262).

2.4 Culture types

Cultural types describe three distinct levels: behaviour strategies, interpersonal relations and cultural biases. Grid and Group dimensions create five different cultural types: four in each quadrant of a grid-group map and fifth in the middle:

- Individualist, low grid, low group type: With this type of culture, the people are free and act like they wish, boundaries are open for negotiation. Environment is competitive and fairness means equal opportunity.
- Fatalist, high grid, low group: With the fatalist type there are binding prescriptions and weak group integration. Individuals' view of the fatalist type of culture believes that they do not have full dominion of the occurrences in life therefore life is totally out of their control. Fairness is not a relevant question as much is explained by fate.
- Hierarchic, high grid, high group: There are strong frontiers, strong division of labour and hierarchies. Collectivism spirit is valued over individualism. Tradition and order are highly maintained. Fairness means equality before the law.

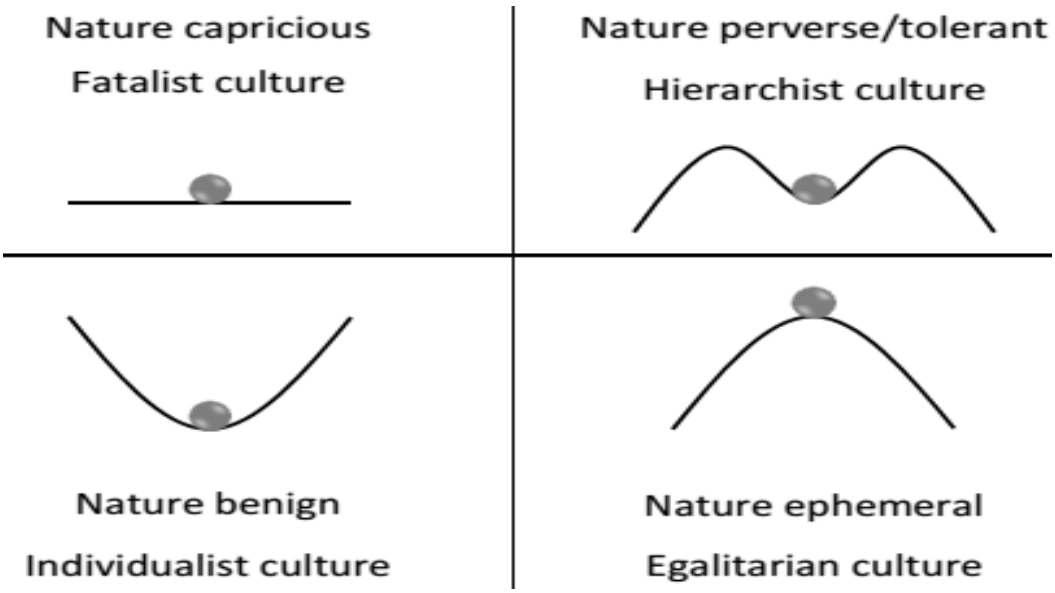
- Egalitarian, low grid, high group: Strong group frontiers but few regulations. With this type of culture members have not much difference in their internal roles played. Members again share opposing views to the outside world. Fairness is equality of result.
- Autonomous, mid grid, mid group (some studies do not recognise this as a distinct group): Removed from coercive and manipulative relations. Individuals are not seen controlling others or vice versa.

2.4.1 Myths of nature

The cultural theory has a link to the ways how people understand and perceive risk and nature (Douglas, 1992, p. 263). These ways are called the myths of nature; it defines nature in profoundly different ways. The four basic ways can be connected to the four culture types:

- Nature is benign: nature is seen as robust object; therefore it is believed that nature can withstand significant disturbances and still return to equilibrium. This view is associated to the individualist culture type.
- Nature is capricious: nature is seen as something you cannot pre determine i.e. (fickle) and one cannot learn from experience. This view is associated to the fatalist culture type.
- Nature is perverse/tolerant: nature can withstand changes within some boundaries but pushing beyond those boundaries will cause a disaster. This view is associated to the hierarchic culture type.
- Nature is ephemeral: nature is delicate and all changes are bad. This view is associated to the egalitarian culture type.

Figure 2.0: Myths of Nature and related culture type.



Source: (Steg, Sievers 2000)

A common way to illustrate the myths of nature and how related cultures perceive their environment is a ball.

The myths of nature have often extended to explain how people perceive their surroundings and environment in other than purely natural terms (e.g. business environment). The cultural theory helps to understand why in some discussions people may hold opposite opinions which they are not willing to change or expose them to discussion. Without cultural theory this behaviour would seem irrational (Douglas, 1999, p. 263).

2.4.2 Culture types and risk perception

The basic assumptions behind each culture type and the way members of culture understand environment have an immeasurable impact on how people understand and manage risks:

- Individualistic cultures see risks as possibilities. Risk taking is very necessary and those who are eager to take risks will be successful over time.
- Fatalist cultures assume that the future is erratic. They believe it is a waste of time for one to assess and manage risks since the future is unpredictable.
- Hierarchist cultures assume that future can be foretold and managed at least within certain parameters. Nevertheless they do not encourage excessive risk taking, rather risks should be actively managed.
- Egalitarian cultures see that all risks threaten current delicate equilibrium. Thus members are risk averse, therefore risk is viewed as implicitly bad and all risks should be avoided as much as possible.

The attitude towards risks and motivation for risk management can vary greatly contingent on the culture type. In an organisation diverse cultures may prevail in different levels and in different units. This means that finding a common understanding and common language about risk may be difficult and requires sensitivity to cultural aspects (Underwood et al., 2010).

2.5 The social amplification of risk

Some risks are more in public focus that would be assumed by their actual lasting staying power which makes them noticeable. This has substantial impact on how governmental bodies and companies make decisions and may lead to inefficient or even dangerous decisions. Risk information can be presumed to be a signal and it is processed in a similar way that electromagnetic signals (e.g. video signals) are processed in physical systems. The risk 'signal' is created by scientists, companies, public agencies, news media, opinion leaders etc. These same actors will also receive and transmit other signals onwards. As a 'signal' is received it goes through amplification process including the following steps:

- Filtering (i.e. only some parts of the message are taken into further processing).
- Decoding, processing the information, attaching social values, interpreting and validating.
- Formulating behavioural intentions and engaging actions.

The actions may cause secondary impacts which may spread over to other parties and distant locations (ripple effect). These actions may be important and they may have desirable or undesirable implications to actual risk level.

The factors that affect the magnitude and character of the social amplification are the volume of the information, the degree that the information is disputed, the extent that it is dramatized and the symbolic connotations. Each of these factors helps to increase the gap between the actual and perceived risk levels (Kaspersson et al., 1988).

2.6 Psychometric paradigm

Another perspective to perception of risk is provided by the psychometric paradigm. It is a framework that assumes risk is subjectively defined by individuals who may be influenced by a wide array of psychological, social, institutional and cultural factors. It has many connections with the prospect theory and cultural theory (Paalanen, 2013).

2.7 Implications for the risk culture model

Individual perception of risk is one of the main themes in the risk culture model. The areas presented here have major roles in the model presented in this thesis. At the most general level the risk management efforts are dependent on how people understand the concept of risk. How risk is understood, how it is communicated and how it appears in formal texts and everyday discussions are all part of risk culture. A group that sees risk as variation and

potentially good or bad thing will act differently than a group that sees risk as a hazard and threat.

2.8 Organisational aspects

Risk management is usually an organisational effort. This section focuses on organisational aspects that have influence on risk management and are important from the risk culture perspective. The presented areas are overlapping but perspectives are different.

In the section 2.8.1organisation culture is discussed at length. Four well known theories are presented in the section 2.8.2-2.9.3. The section 2.9.4 focuses on decision making.

2.8.1 Organisational culture

Several books have been written about organisational culture, cultural diversities and ways to manage and change culture. Most cultures contribute immensely to work outcomes, performance and ultimate success or failure of organisations. But in many cases the definition of culture is missing or left vague (Paalaneen, 2013). In literature the term culture can mean more or less anything. One of the basic questions is whether organisational culture is something an organisation has or something it is. This distinction has deep impact on how culture is seen consequently, enabling individuals to know whether to focus on managing and changing or on understanding culture. In the following sections four different perspectives and definitions are reviewed. In addition, eight metaphors for organisational culture are discussed briefly.

2.8.2 Shared Values and Assumptions

"A pattern of shared basic assumptions learned by a group as it solves its problems of external adaption and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in

relation to those problems" (Schein, 2010, p. 18). He suggests that any group with enough shared history enabling developing of shared assumptions will develop a culture. There are no geographical or physical borders.

2.8.3 The three levels of culture

Schein' model of organisational culture is based on three levels (Schein, 2010 p. 23-33).

- The level of Artifacts includes all one can see, hear and feel such as: architecture and physical environment, language and jargon, style, observed behaviour and display of emotions, myths and stories about the organisation, stated values and observable rituals.
- Goals, values, ideologies and rationalisation are the components of espoused beliefs. This level is used as a way to portray culture to others and within the group.
- Assumptions are the deepest level which governs behaviour, perception, and feelings; however they are unconscious and taken-for-granted.

The level of espoused beliefs and values concern beliefs about what works and what is good. Solutions, explanations and proposals become espoused beliefs and values as they are tested and perceived to work either through empirical data or social validation. The espoused values and beliefs offer meaning and comfort to the group. The espoused values are conscious and they can be explicitly stated (Schein, 2010, p.18).

The level of underlying assumptions is about what is taken for granted, what is the truth and what is non-debatable. The basic assumptions are formed by continually implementing certain beliefs and values successfully. The basic assumptions are so strong that it is inconceivable to behave in another way. The basic assumptions, once formed, are extremely difficult to alter.

2.8.4 The main dimensions of culture

The main dimensions define the content of culture, i.e. what the basic assumptions and espoused values are about. Schein presents numerous dimensions that can be divided into two sets. The first set of dimensions consider very profound, even philosophical, areas such as what is reality and how it is defined, what is truth and what passes for information, how time and space are understood and basic assumptions about human nature, human activity and relationships between people.

The second set covers somewhat more mundane perspectives of assumptions about external adaptation and internal integration. The dimension of external adaptation covers topics such as mission, strategy, goals, means and measurement. The dimension of internal integration covers areas of common language, defining group limitations, distribution of power and status, norms of trust and friendship, allocating rewards and punishment and explaining the unexplainable (Schein,2010, p. 70).

2.8.5 Software of the mind

Hofstede (2010) theory of cultural dimensions is based on his extensive work with international companies, especially with IBM. His theory of culture is strongly focused on national and ethnic cultures. Organisational culture is just a one of the areas that the theory can be used.

2.8.6 Values and Practices

The mental patterns of thinking, feeling and acting impacts the way people act and behave to a large extent (i.e. mental programs or software of the mind). For a large part they are formed in the early childhood but they are developed also afterwards.

There are three levels of the mental software: basic human nature, culture, and personality (Hofstede, 2010). He defines culture as "the collective programming of the mind that distinguishes the members of one group or category of people from others". Culture is always collective and learned phenomena (Hofstede, 2010, p. 3-6). Culture is presented as four layers or "skins of an onion": symbols, heroes, rituals and values. Symbols are words, objects etc. that carry a meaning that is important only to those who share a culture. Symbols are easily created, copied and lost. They form the most superficial layer of culture. Heroes are persons that have characteristics highly valued in the culture. Rituals are collective actions that are considered socially essential and thus carried for their own sake.

Symbols, heroes and rituals are observable to outsider through practices. However their cultural meaning is not visible and lies in how these practices are interpreted by insiders. In the core of culture are values. They are tendencies to prefer something over something else. Values deal with paired concepts such as good versus evil or unnatural versus natural. Values are learned mostly within early childhood after learning is more and more focused on practices (Hofstede, 2010).

2.8.7 Dimensions of national cultures

The initial theory presented four dimensions of culture that can be measured relative to other cultures. In later work two additional dimensions were added. The dimensions are:

- Power distance presents equality or inequality within a culture and describes how evenly power, authority and status are spread between individuals, how limited or strong dependence of subordinates on bosses there is. It is based on the value system of the less powerful members rather that more powerful members of culture (Hofstede, 2010, p. 60-62).

- Collectivism/Individualism represents how strong ties there are between individuals, how people are supposed to look after themselves and their family and what kind of loyalty is expected from group (e.g. family) members (Hofstede, 2010, p. 94-99).
- Femininity/Masculinity refers to traditional social gender roles: masculinity is about assertiveness, competitiveness, achievement and toughness. Femininity is about care, nurture, co-operation and security (Hofstede, 2010, p. 137-144).
- Uncertainty avoidance is about how uncertainty, risk and ambiguity are understood, handled and tolerated. Uncertainty in this context is a personal feeling creating discomfort and anxiety. Many of these feelings are cultural i.e. learned (Hofstede, 2010, p. 188-195).
- Long term/short term orientation is related to values oriented either towards future (such as include perseverance or thrift) or to the past or present (such as respect for tradition or fulfilling social obligations). This dimension was seen to be directly related to economic growth. This dimension was not part of the initial theory (Hofstede, 2010, p. 236-239).
- Indulgence/Self-restraint is related to the concept of subjective wellbeing (or happiness). It measures whether members of culture feel that gratification of natural human desires should be restrained and regulated or gratification should be free and related to enjoying life and having fun. This dimension was not part of the initial theory (Hofstede, 2010, p. 280-286).

2.8.8 National culture versus organisational culture

The software of mind theory has been studied and applied in organisational context. There are certain aspects that are dissimilar in organisational and national context. National cultures are acquired during early childhood and in lesser extent later in life and they contain most

of the basic values. Organisational cultures are acquired when entering an organisation, when basic values are already in place. They consist mainly practices and are therefore more superficial.

Hofstede (2010) states in the core of organisational culture are not values but shared perceptions of daily practices. Values run deeper and they are not largely affected by belonging to an organisation.

This conflicts with management consultant literature which focuses on values of founders and leaders of organisations. The focus of Hofstede is on the ordinary members whose (supposed) task is to carry organisational culture. He states that in effect values of the founders and leaders become shared practices of the ordinary members (Hofstede, 2010 p. 346-348).

The values have important role in selecting new members into an organisation. Alignment in values of the people in an organisation is due to hiring process as organisations tend to hire people who represent values of the organisation. The socialisation process after hiring is about learning practices (Hofstede, 2010).

2.8.9 Dimensions in organisational cultures

Hofstede (2010) concludes that the dimensions used to measure culture on the national level are not appropriate for measuring organisational cultures within same national culture. Instead six other dimensions should be used. These dimensions differ from national dimensions in such a way that they are more focused on practices than underlying values. Each of dimensions is neutral and there are no good or bad sides in any of the dimensions. The six dimensions are:

- Process oriented/results oriented. Process oriented cultures perceive that they avoid risk, spend only limited effort in their tasks and see that every day is the same. Result oriented cultures perceive that they are comfortable with unfamiliar, spend maximal effort and see that every day is different (Hofstede, 2010, p. 355-356).
- Employee oriented/job oriented. In employee oriented cultures people feel that organisation is interested about employee welfare while in job oriented cultures people feel that employee is interested only in the work (Hofstede, 2010, p.356).
- Parochial/professional. In parochial cultures employees identify themselves mostly with the organisation. In professional cultures they identify themselves mostly with their job (Hofstede, 2010, p. 356-357).
- Open system/closed system. In open cultures people feel that the organisation and its people are welcoming newcomers and outsiders. Only a very short time and effort is needed to fit in. In closed cultures people feel that organisation is closed and secretive. Only selected people will fit it (Hofstede, 2010, p. 357).
- Loose control/tight control. In cultures of loose control costs are not seen as an important issue, meeting times are flexible and people joke about their job and company. In cultures of tight control people are highly cost-conscious, punctual and jokes about job or company are rare (Hofstede, 2010, p. 357-358).
- Normative/pragmatic. Normative cultures emphasize following organisational procedures and having high standards on business ethics and honesty. Pragmatic cultures are market driven, emphasize customer needs and have pragmatic attitude towards business ethics (Hofstede, 2010, p. 358).

Based on these six dimensions Hofstede (2010) identified three broad subcultures: professional, administrative and customer interface subcultures. The groups are clearly distinct and there are several culture gaps between the subcultures (Hofstede, 2010, p. 364-366).

2.9 Culture Reflecting Business Environment

Deal & Kennedy (1999) proposed a model that states that the type of an organisational culture depends on the business environment the company is operating. They proposed a simple typology of cultures based on the degree of risk in company's activities and the speed of feedback from the markets (Deal & Kennedy,1999, p. 107).

Deal & Kennedy (1982) use a dictionary definition of organisational culture: culture is "the integrated pattern of human behaviour that includes thought, speech, action, and artifacts and depends on man's capacity for learning and transmitting knowledge to succeeding generations" (Deal & Kennedy, 1999,p.4).

Culture is based on four levels: values, heroes, rites and rituals, and cultural network.

Values are the basic concepts and beliefs that define success and establish standard for achievement. Heroes are people that personify values and provide tangible role models for employees to follow. Rites and ceremonies are orderly routines of everyday natural life. They show what kind of behaviour is expected. Cultural network is informal communication network that carries values and myths and stories about heroes. It is essential for getting things done in an organisation (Deal & Kennedy, 1999 p. 13-15).

2.9.1 Risk and Feedback – four culture types

Deal & Kennedy (1999) present a simple typology that is based on two dimensions: how much risk is associated with the activities of a company and speed of feedback that the

company and its employees receive from the markets. Using these two dimensions they present four cultural types.

The tough-guy, macho culture represents culture where individuals pursue high risks and get quick feedback whether they are true or untrue. This culture type is associated to rapid decisions and ability to contain high risks: culture is typical in industries where successful risk taking may create fortunes almost overnight: e.g. Venture capital, entertainment, and professional sports.

Focus is excessively on the short-range performance at the expense of long term expansion and learning. The culture is extremely competitive and it creates stars which may last only a short time (Deal & Kennedy, 1999, p. 108-113).

Work hard/play hard is related to low risk environments where people get quick feedback. This culture type is associated to industries where action is essential and focus is on customer needs:

e.g. sales and manufacturing. Success of members of work hard/play hard culture is measured in volume. Focus on volume is strength but also a weakness as volume may come at the expense of quality.

Initially this type of culture was strongly connected to aspect of fun and commitment (Deal & Kennedy, 1999, p.108). In their further work Deal & Kennedy (1999) observe that focus has moved away from the play hard aspect and more towards the work hard aspect. Bet-your-company cultures are associated with high risk and slow feedback. Companies need to make high stakes commitments that will prove to be right or wrong only long time afterwards. Sometimes the high stakes may mean betting the whole company. This culture is typical in industries where high upfront commitments are required to bring uncertain benefits in the future:

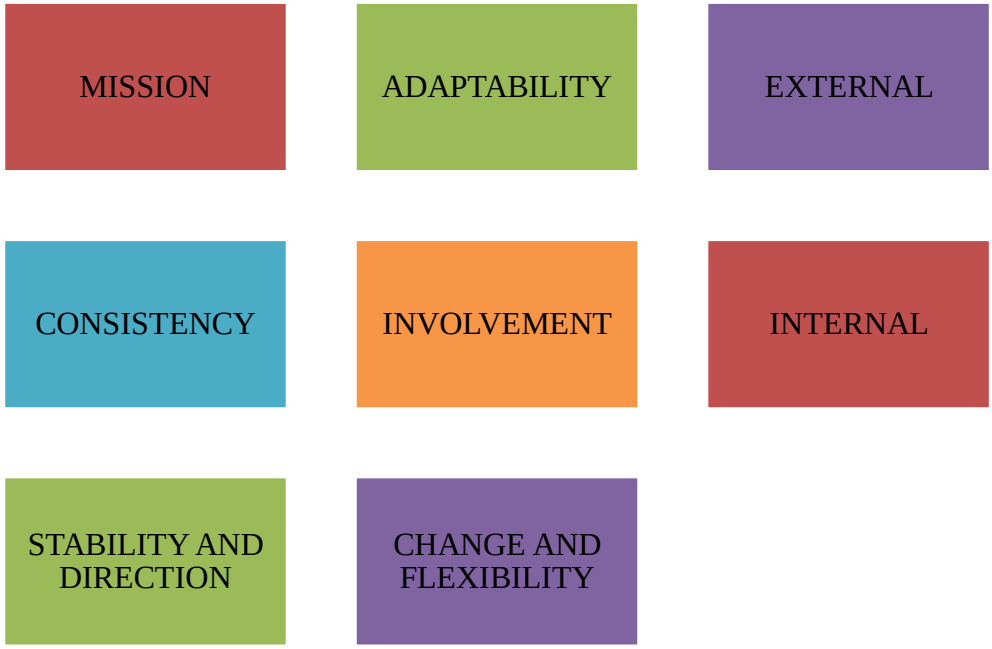
e.g. oil drilling and aerospace manufacturing. These cultures are characterised by deliberateness and planning. Expertise and experience is valued. They focus mostly on the long term (Deal & Kennedy, 1999). In their further work Deal & Kennedy (1999) observe the long-term vision of bet-your-company cultures has eroded since the early 1980s.

The last type is the low risk and low feedback type: the process culture. This culture is related to large institutions and regulations. Typical areas include banks, insurance, utilities, pharmaceutics and governmental organisations. People take little risk but receive little or no feedback on effectiveness or impact of their actions. This focus is more on internal efficiency and procedures (Deal & Kennedy, 1999, p.113-116).

2.9.2 The culture and effectiveness model

Denison (1990) has offered a framework for organisation that links organisational aspects and effectiveness together. The model is based on four basic concepts that are both coinciding and at some parts even conflicting. His model is less comprehensive than the models of Hofstede & Schein (2010) as his focus is mostly on the effectiveness. Denison defines organisational culture as "underlying values, beliefs and principles that serve as a foundation for an organization's management system as well as the set of management practices and behaviors that both exemplify and reinforce those basic principles"(Denison, 1990, p. 2). He also adopts a definition that is based on the definition of Schein (among others) that describes organisational culture with four levels: artifacts, perspectives, values and assumptions (Denison, 1990, p. 32-33).

Figure 2. 1: The culture and effectiveness model



Source: Denision (1990)

2.9.2.1 Involvement

Involvement means such participation that creates sense of ownership and responsibility. Sense of ownership implies stronger commitment to organisation (Denison, 1990, p. 7). The concept of involvement addresses internal dynamics of an organisation and it is seen to help in change and provide flexibility (Denison, 1990,p. 14-15). Denison proposes that there are two kinds of involvement: spontaneous and informal kind and more formalised and planned kind. Both kinds seem to have positive connection to effectiveness (Denison, 1990, p. 179-180).

2.9.2.2 Consistency

The consistency is associated with having shared system of beliefs, values and symbols widely understood by the members of culture. High consistency is related to the concept

of strong culture that was much used and praised by the early organisational culture texts. It is proposed that high consistency has positive connection to effectiveness. But this holds only if the shared values and beliefs are aligned with actual practices of an organisation. If there is a conflict between these the high consistency is more likely to be a burden (Denison, 1990, p. 8-10). The concept of consistency addresses internal dynamics of an organisation and it is seen to provide stability and direction (Denison, 1990, p. 14-15).

2.9.2.3 Mission

The concept of mission means shared definition of the function and purpose of the organisation. The mission provides purpose and meaning, a clear direction and goals to an organisation and its Adaptability, Consistency, Involvement and Mission to members. It convinces individuals that success is more likely. The concept of mission addresses external dynamics of an organisation and it is seen to provide stability and direction (Denison, 1990, p. 13-15).

2.9.2.4 Adaptability

Adaptability has three aspects: ability to respond to external pressures, ability to respond to changes in internal demands and ability to restructure processes and behaviours that enable an organisation to adapt to changes external and internal demands (Denison, 1990, p. 12). The concept of adaptability addresses external dynamics of an organisation and it is seen to help in change and provide flexibility (Denison, 1990, p.14-15).

2.9.2.5 Effectiveness

Denison states that the four dimensions can be seen as causes that lead to the effect that is effectiveness. Effectiveness can be beheld from three different perspectives: fulfilling stakeholder needs, reaching one's goals, and effectiveness of a decision making process

(Denison, 1990, p. 35-37). Effectiveness is correlated with performing well in all of the four dimensions of the framework (Denison, 1990).

2.9.3 Overview and comparison

The four models for organisational culture are compared in this section. The main aspects the four models are summarised in the tables below. These aspects are considered to be important especially from the risk culture standpoint.

Table 2.1: Definition of culture and cultural levels

	Definition of culture	Cultural levels
Schein	Pattern of shared assumptions ad values	Assumptions Values and beliefs Artifacts
Hofstede	Collective programming that distinguishes one group from another	Values Rituals Heroes Symbols
Deal and Kennedy	The integrated pattern of human behaviour	Values Heroes Rites and rituals Cultural network
Denison	Underlying values, beliefs and principles and set of management practices and behaviours	Assumptions Values Perspectives Artifacts

Source: (Denison, 1990)

Table 2.2: Cultural dimensions

	Cultural levels	
Schein	Reality and truth Time Space Human nature External adaptation Internal integration	
Hofstede	**National culture:** Power distance Collectivism/Individualism Femininity/Masculinity Uncertainty avoidance Long/short term orientation Indulgence/Self-restraint	**Organisational culture:** Process/results oriented Employee/job oriented Parochial/professional Open/closed system Loose/tight control Normative/pragmatic
Deal and Kennedy	Risk related to operations Feedback from the marketplace	
Denison	Involvement Consistency Adaptability Mission	

Source: (Denison, 1990)

Table 2.3: Creation of culture and culture change

	Creation of culture	Cultural change
Schein	Creation of a new culture is based on: 1) Beliefs, values and assumptions of founders of the group 2) Learning experience of group members as the group evolves and new beliefs 3) Values and assumptions brought in by new group members.	Changing culture is typically painful process. Often a dramatic event or crisis is required. A change requires process of unfreezing, changing and freezing of the culture.
Hofstede	Values are acquired mostly during the early childhood. Organisational cultures consist mostly practices that reflect values of founders and leaders.	Changing culture requires structural changes, process changes and personnel changes. Changing culture calls for persistence. Cultural change is only somewhat manageable
Deal and Kennedy	Creation of culture is not discussed.	Cultural change is initiated and managed by the top management. Change must be led by a corporate hero.
Denison	Creation of culture is not discussed.	Change requires changes in external demands. Managed controlled change is not likely to be successful. Organisations' capacity to change is huge.

Source :(Denison, 1990)

Table 2.4: How culture is related to management and risk.

	Relationship to management	Relationship to risk
Schein	Leaders create, manage and change culture.	Basic assumptions and beliefs define how risk is understood and ultimately managed.
Hofstede	Culture is seen and evaluated mostly from the perspective of ordinary members of a group.	The dimension of uncertainty avoidance has clear connection to how risks are understood. The dimension open/closed system correlates with uncertainty avoidance dimension.
Deal and Kennedy	Managers lead and shape culture from outside. They are not part of the culture but external observators.	Risk is inherent part of the model. One of the two main dimensions in the cultural typology is risk related to operations.
Denison	Right culture is important for organisational efficiency. Controlled change can't be managed.	Risk is not explicitly referred. All of the dimensions relate to the way risks are understood and managed.

Source: (Denison, 1990)

2.9.4 Decision making

The process of identifying and analysing potential choices as well as selecting the choices that are pursued is known as decision making. Decision making creates (more or less) recognizable results. Many decisions are made mechanically but particularly in organisational settings decisions are made consciously and at least some are formal. The following sections focus on more cognizant and official decisions. Decision making is perceptive, thoughtful and a social process. All of these aspects impact the decision making process and actual decisions (Paalaneen, 2013). Decision making processes and methods are influenced by the organisational culture. Decision making can be explained in several of ways. The way decision making is described and understood influences how decision making is seen and what kind of role formal decision making has.

2.9.4.1 Decision making as a process

Decision making can be seen as an identifiable process or as an activity. The traditional way to describe decision making (going back to Plato & Aristotle) is to state it as purely cognitive and identifiable process. All decisions can be reduced to logical and consistent choices. It is assumed that different options can be identified and that decisions are discrete events. This view describes decision making ultimately as an individual process. Even though this view criticised to be psychologically unrealistic it is used in many decision support tools and methods (Cook et al, 2007 p. 3-4).

The traditional way to describe decision making is to relate it to gambling. The decision circumstances are framed to involve bets and payoffs that have some objective or subjective probability. A decision maker estimates expected payoff of each potential decision-chain and acts accordingly. This is common tactic in decision making textbooks

((Baird, 1989; Raiffa, 1994 & Raynard et al, 1997). This was also the approach that e.g. Kahneman & Tversky (1979) assumed in their seminal work regarding loss aversion. To appreciate real life decision making complex models are needed. Real life decision makers are not always rational and they may have hidden agendas. Understanding and accepting human "non-linearity" is vital for effective and efficient decision making.

2.9.4.2 Decision making as an activity

More complex and realistic view is to see decision making as an activity. This view assumes that decisions are not necessary discrete events but something that happen along the way. It is also assumed that choices may not be very distinctive or easy to distinguish and even if they are it is often not possible to assess all possible options. Thus decision making is seen as activity that produces decisions but it is not easy to determine when actual decisions are made. This view focuses more on the way how decisions are made instead of what is being done (Cook et al., 2007 p. 5-11). Several decision-making-as-an-activity theories are discussed below. The recognition-primed decision theory proposes that a decision maker seeks to connect a decision with previous decisions and experiences. The decision maker tries to recognise similarities between the current situation and previous situations and to use a solution that has been successful in the past. He or she performs mental simulations about how well the previous solutions might work. The solution is modified iteratively until it is satisfactory. Thus the decision maker does not copy old solutions but uses them as a starting point (Beach & Connolly, 1994).

The narrative theories suggest that a decision maker makes a mental model about the situation at hand and potential outcomes. Models can be described as scenarios or stories. They are plausible alternatives for future from the perspective of the decision maker. The alternatives and thus the

outcome of the decision depend strongly on the perspective of the decision maker (Beach & Connolly, 1994). Incremental theories suggest that decision making process can be either a series of small experiments or a large one-off decision. In incremental situations decision making and decision implementation are intertwined to a single continuous process. Feedback has significant role in incremental decision making and goals and assumptions may change during the process (Beach & Connolly, 1994). Moral and ethical theories propose that morals, beliefs and values of decision makers have great impact on decisions. Thus there can't be a purely rational decision maker. The decision maker takes three aspects into account when making decisions: utilitarian aspects, social aspects based on the norms of the society, and deontological aspects based on the beliefs and values of the decision maker (Beach & Connolly, 1994). The image theory assumes that decision makers use three categories of knowledge (images) to make decisions: knowledge about beliefs and values, knowledge about desirable future, and knowledge about plans to reach desirable future. The decision maker uses the knowledge either to decide whether he or she should adopt new goals or plans (adoption decisions) or to assess whether his or her actions are effective to achieve the goals (progress decisions) (Beach & Connolly, 1994).

2.9.4.3 Decision making in groups

In many organisational settings decisions are made in groups. Group decision making makes thing more complicated as in most situations people making a decision do not have the same information available. This means that everybody has slightly different perception of the decision. Most organisational decisions are ill defined and all options are not clear for everybody. In addition organisational decisions are affected by internal politics, power

struggles and personal aspirations of each participant. Thus organisational decision making processes can be very complex (Beach & Connolly, 1994).

Lu et al.(2007) indicates that there are two basic group decision making situations: non-cooperative and cooperative situations. In the non-cooperative situation the group members are competing and there may be disputes and conflicts between them. In the cooperative situations members of group seek to achieve a common goal from the risk management perspective the

cooperative situations are more common even though both situations can be relevant. A single decision maker can base his or her decision on rules or algorithms. A group decision is always more complex. Even in cooperative situations group decision making involves conflict of interests and different opinions. Group decisions are typically made based on simple methods, such as authority (leader decides), majority rule, ranking rules and consensus (Lu et al., 2007). It is not obvious that groups make better (or worse) decisions than individuals. The group decisions have potential to be better than individual decisions but there are many pitfalls that can reduce the quality of group decisions. Many groups are designed to be satisficing entities (i.e. seeking good enough solutions instead of optimal). Groups tend to favour cohesion: more extreme (i.e. far from group mean) views tend get less attention than views that are closer to mean (Kerr & Tindale, 2004). Information that is not shared by most of the groups is not weighted as much as information that is widely shared. This may lead to too early and suboptimal decisions based on information that is shared by most of the group. Having shared information increases a group member's influence in a group: having much shared information increases likelihood of one's less shared opinions to be accepted (Lu et al., 2007).

Some studies have shown that group decisions are more inconsistent and varying than individual decisions. This is seen especially in groups participants are allowed to discuss to find common

decision. The research suggests that groups function better when the members share the same ideas about the task of the group and roles of its members (Lu et al., 2007).

2.9.4.4 Decision making and risk

Risk has important role in most decisions. Associated risks influence desirability of each potential choice. The term risk has typically negative connotations even though risk is elemental part of decision making. More than actual risks decision making is influenced by perception of risks. In general decision making attempts to improve level of certainty (Cook et al., 2007, p78-89). The context and focus of a decision process affects how different risks are perceived. Perception of different risks depends on whether they are focused or not, how well they fit in the perceived past and present reality, and how convincingly they can be described. Also hopes and goals related to decision choices influence how risks are assessed. Hard facts such as statistical evidence may have relatively small role in decisions (Teigen & Brun, 1997). Formal risk management and formal decision making have a strong connection. Failure to take risks into account leads more likely to suboptimal decisions. Risk management is more or less pointless unless it does not used decision making. Most decisions have uncertainties and risky aspects even if they not always acknowledged. Therefore to understand risk management it is necessary to understand decision making. This chapter discusses some of the most important aspects of decision making.

2.9.4.5 Psychological aspects of decision making

Psychological aspects and behavioral aspects appear to be related with risk culture. Risk has important role in most decisions. The term risk has typically negative connotations even though risk is elemental part of decision making. Decision making is influenced by perception of risks.

In general decision making attempts to improve the level of certainty and it affects the risk management frameworks of insurers (Cook et al., 2007, 78-89).

2.9.4.5.1 Framing

Framing means setting observed events and issues into a context that has meaning to an observer. Same situation can be seen in many different ways. The selected perspective, or frame, has impact on how the situation is interpreted and perceived. Thus framing of a decision may have a profound impact on the outcome of the decision. If an existing frame is challenged people are quick to adjust or replace their frames. In social situations (such as most organisational decisions) people seek to understand the frames of other people. People with shared experience tend to frame situations in similar way (Beach & Connolly,1994).

2.9.4.5.2 Involvement

Importance of a decision and motivation of a decision maker influence how strongly he or she is involved in decision making. Level of involvement affects decision making. All involvement is not similar. Instead three different types of involvement have been identified: value-relevant involvement, impression-relevant involvement and outcome-relevant involvement. These are related, respectively, to whether the decision represents values important to the decision maker, it is perceived important to participate into the decision and whether the outcome is important to the decision maker. Different types of involvement drive different behaviour: e.g. value-relevant involvement leads to seeking of choices that support one's values whereas impression-relevant involvement leads to selection of choices that are known to be perceived positively. Outcome-relevant involvement supports objective assessment of choices whereas the two other types are connected to more subjective positions (Verplanken & Svenson, 1997).

2.9.4.5.3 Compatibility

Compatibility refers to similarity and compatibility of input and output of decision situation. People act differently if input and output are compatible compared to a situation when they are not. Two different effects influence how people structure decisions: task effects relate to issues such as general structure of the decision, used parameters, time constraints etc. whereas context effects relate to issues such as content of the decision. Structure of a decision and how different items are understood as inputs and outputs influence how decisions are made. Compatibility of input and output influences on what kind of decision strategy is chosen. The selected strategy has impact on evaluation of potential choices, actual decision and judgment of the outcome (Selart, 1997).

2.9.4.5.4 Emotions

Decision making is not purely logical and rational process. Emotions have strong influence on how people approach decisions and what is outcome of decision process. Mood can have a marked effect on how decisions are made. Even slightly positive mood can have substantial positive effect on creativity and ability to perform complex tasks. Positive mood makes people also more loss aversive (Beach & Connolly, 1994). When people are in positive mood they are more likely to rely on their gut feeling and to use simplifying heuristics .Negative mood may cause decision makers to stick more to formal methods and procedures (Elsbach & Barr, 1999). Regret and disappointment are the most studied emotions in decision making. People feel regret both when a decision turns out badly but also before anything has happened as they know that something bad may happen. People shape their decisions to avoid regret. The magnitude of regret that people feel is strongly dependent on whether they have taken active steps to achieve a state that produces a loss (e.g. buying a share) or have been inactive (e.g.

keeping a share that has been owned for a long time). Whether it is action or inaction that causes larger regret (when comparing similar losses) depends on the situation. Less regret is experienced if a losing decision was seen to be justifiable (Beach & Connolly, 1994).

2.9.4.6 Implications for the risk culture model

The organisational aspects discussed in the previous chapter all put risk culture into a good shape. Organisational culture impacts on almost everything that an organisation clings to. It can be argued whether risk culture is part of organisational culture or organisational culture is part of risk culture. Organisational culture is without doubt broader concept than risk culture. However it can be argued that only part of organisational culture influences risk management. Thus the latter perspective is embraced in the model in this thesis and organisational culture is seen as something that influences risk culture. Decisions are the brain behind the success or failure of operative risk management and risk management strategies. If operative risk management does not lead to right decisions it can't be successful no matter how sophisticated and accurate it is. Thus it is important how decisions are made and who makes them. Whether decision making processes are collective or authoritative or analytic or fast have very different risk management implications. Decision making is reckoned to be such a vital aspect in risk culture that is emphasized in the risk culture model by its own layer.

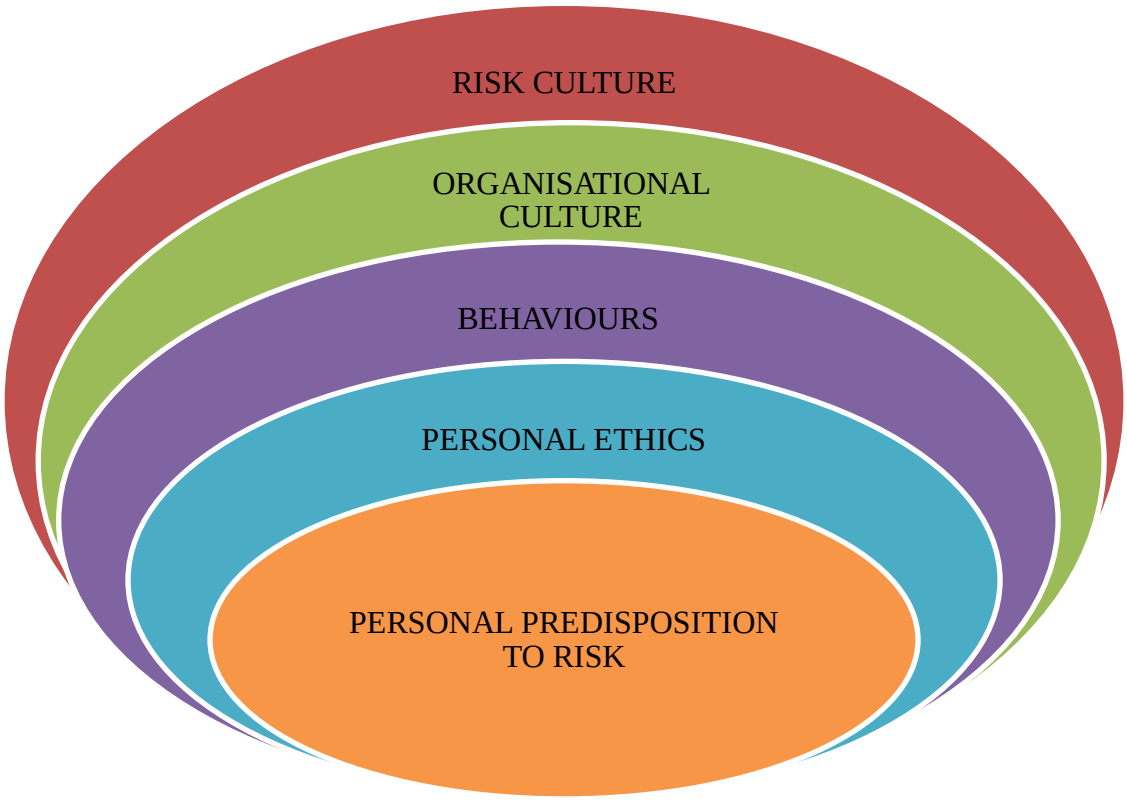
2.9.4.6.1Risk culture model

The main goals of this thesis are to evaluate the relationship that risk culture variables have with each other, know how risk culture variables impact on underwriting risk. A model or theory can be formative (i.e. Telling how things should be done) or descriptive (i.e. Telling how things are done). Both perspectives can be useful for academic and management purposes. The IRM model

that acted as one of the main motivators for this thesis is clearly a formative model. Its aim is to define a good risk culture and to describe how organisations should act to improve their risk management. In this work the impact of risk culture model on underwriting risk is presented.

Risk culture is viewed as five connected layers of an onion-like system as postulated by IRM. The four inner layers are: personal predisposition to risk, personal ethics, behaviours and organisational culture. The four inner layers influence the fifth layer, risk culture. The model is displayed in the Figure 2.2 (Paalaneen, 2013). The first three layers are more connected to an individual and the last two to organisations.

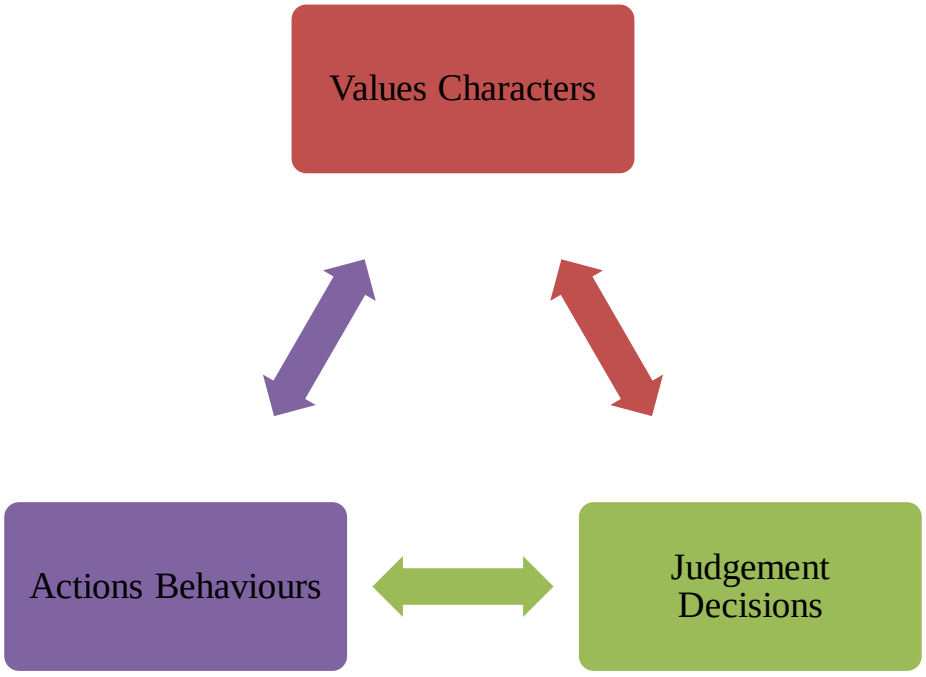
Figure 2. 2: Risk Culture model



Source: Paalaneen (2013)

The main theories that are behind the IRM model of risk culture are Cultural theory of risk. Double S model by Goffee & Jones and work-value model by Spony (2003). The double-S model describes an organisation as a collective based on two dimensions: sociability and solidarity. The solidarity dimension is related to common tasks, shared goals and mutual benefits. The sociability dimension is related to high people focus and how well people get on together. Based on these two dimensions four types of organisations are defined: fragmented, mercenary, networked and communal (Paalaneen, 2013). The work-value model is a model that describes cultural aspects both on organisational and individual level. The model is constructed around four dimensions or work-value scales: self-enhancement, individual dynamics, consideration for others, and group dynamics (Spony, 2003). The aim of the IRM model is to be very practical and easy to apply. A major part of the model is related to tools and methods that can be used to measure different aspects of risk culture and how to change culture towards "best practices". The individual level of the IRM model covers three areas: personal predisposition to risk, personal ethics and behaviour. Personal disposition to risk is presented using two dimensions, risk tolerance and how analytical or structured approach one has towards risk. On a practical level the issue is approached by using a commercial method called Risk Type Compass. The method groups people to nine different risk types. Using the Risk Type Compass one can study personal disposition to risk at individual and group level (Paalanen, 2013).

Figure 2. 3: Character, judgement and behavior flow model



Source :Paalenen (2013)

Personal ethics and behaviour are explained using a character, judgement, behaviour flow model shown in Figure 2.3. The model states that actions and behaviours are derived from judgements. Judgements themselves are determined by individual character, experiences and moral values. These are influenced by actions and behavior.

2.9.5 Empirical review

A lot of empirical studies have concentrated on the effects of corporate governance measures on risk-taking behavior of insurance companies. However, a general consensus has not emerged—with one reason being that corporate governance variables have different impacts depending on the risk measure used (e.g., Elyasiani & Jia, 2011). Moreover, most research on corporate governance has been concerned with the study and resolution of collective action problems

(Boubakri, 2011). Compelled by such an agency theory perspective, culture is equated with ethics and integrity, that is, to mitigate agency and governance problems that arise from conflicting interests that cannot be adequately resolved formally. This understanding of corporate governance and integrity also found its way into risk management practice. COSO (2004) argues that, managers foster a control environment by setting the tone at the top. In this context, the control environment serves as a boundary of last resort in case the formal risk management system fails. However, such an understanding limits culture to a static boundary parameter and thereby neglects the dynamic interaction between the formal risk management framework and an organization's or subunit's culture.

PWC (2014) conducted a study on risk culture. The findings establish that financial institutions are yet to create a true seat for the risk function. That is, about 67% of decisions taken at the top did not make good use of risk information in their decision making. PWC (2014) also observed 40% of organisations do not have the tools available to completely analyze risk and make well-informed decision. Turner (1978) also conducted a survey and found out that many organisations failed to connect up disparate sources of risk information in the analysis of decision making, disasters and accidents.

Power et al. (2012) undertook a survey on risk culture to determine risk culture awareness and education .The survey established that risk culture awareness and education lags behind. Managements have made progress in setting the right "tone at the top," but management actions—in setting appropriate risk standards and promoting desired behaviors—aren't living up to these communications. More than 70% of survey respondents recognize risk assessment as integral to key business decisions in their organization. But when it comes to delivering the risk culture, things don't always work out as planned. These results confirm what we've seen at many

financial institutions in that the risk function's involvement often comes too late or has been relegated to a check-the-box exercise. PWC, 2014 also observe that over one-third of respondents did not think that risk awareness and education were sufficiently promoted across the organization.

Ashby, 2011; Power et al. (2008) conducted a study on how incentives influence risk behavior and control decisions. They found out that 60% admit that incentives are motivation to take reasonable risk decisions and control decisions .About 40% agree that financial institutions have not done enough to change the underlying incentives and consequences that promote the right risk behaviors—and deter the wrong ones. However PWC (2014) establish that incentives are inadequate to deter misspelling and misconduct

PWC (2014) and COSO (2004) conducted a study to establish if controls, checks and detailed processes are in place for effective risk management. The study found out that 80% of survey respondents agree or strongly agree that adequate controls are in place to identify potential risk violations, however institutions continue to struggle in their efforts to identify emerging risks across business units and geographical regions. They also observed that one of the major barriers cited is the lack of readily available reports and dashboards. One out of every four respondents admitted that they do not have a full understanding of the personal consequences for a compliance violation. Even more surprising, less than one in five respondents.

Ashby, Palermo & Power 2012 conducted interviews with senior risk leaders in big financial organisations and it revealed that a lot of interviewees agreed that risk culture is the most unseen and most vital issue which fails to get adequate attention in good times. Risk culture work streams are often linked to ambitions to change banking sector reputation; their study focused on some themes which are discussed below:

Information and organisational structure: Their study revealed that there was a failure to connect up disparate sources of risk information in analysis of disasters and accidents. This demonstrates that risk culture is seen not only or primarily as an ethical issue or as having to do with incentives. But has to do with management practice and information structures.

Among their sample, there was an emphasis on risk centralisation coupled to enhanced oversight capability. In a few organisations this centralisation created 'tighter control over big earners' who were made to understand that their own rewards were dependent on the lower risk-return activities elsewhere in the group. In this setting centralisation was also coupled to a programme to develop more of a group mentality at the level of the business. At a number of other organisations centralisation was closely linked to structural change in the form of new, small groups to oversee silos, support the board and provide risk oversight perceived as previously missing or inadequate.

Another key aspect of the new emphasis on centralisation involves information. In part this is reflected in efforts to drive risk ownership into the front line of business even more than at present. They discovered that some organisations are explicitly building an approach where rewards and promotional prospects are attached to compliance across a range of activities. Such an approach depends on finding metrics with desired behavioural impact.

A closely related theme is the issue of the aggregation of risk data. Problems with other financial organisations, such as Universal Bank of Scotland, revealed considerable informational fragmentation and a failure to consolidate risk information, even at the simple level of counting types of assets and commitments. This is both an information issue and an organisation issue; it was suggested that how often the quality of risk data aggregation is reviewed is a good 'dip-test' of the state of organisational risk culture. Monitoring and hygiene work of this kind is not

glamorous but may be regarded as the foundation of organisational risk culture. More generally, the maintenance of risk infrastructure in the form of policies, standards and authorities was seen as essential.

Finally, the study revealed that all organisations information were in silos which did not encourage information sharing.

Connecting first and second lines of defence: Their study revealed that key issues are played out at the interface between what are called the first and second lines of defence. Several interviewees admitted that there were significant challenges in operationalising this interface. An ever present issue in maintaining risk culture is the structural position of risk functions within the organisation as a whole. One commonly identified issue was that of risk functions being captured by business units and this shows some of the difficulties of embedding risk directors within the front line. Regulators also play a role in this issue by having concerns about lack of role clarity of embedded risk functions. As a result, there is a proliferation of what one interviewee called 'dotted line reporting' to cope with role dualities.

A second issue, connected with the earlier discussion about information sharing and communication, concerns the reporting of risk issues by first line. A perceived challenge is to avoid punitive actions that may prevent managers from openly raising issues of concern. Preliminary view from these discussions is that role tensions and ambiguities of this kind are inherent in risk culture and organisations. They also discovered that a number of organisations pointed to recruitment practices and pre-employment screening as an essential pillar of building the 'right' kind of risk culture.

Documentation versus behavioural change: Several interviewees noted that risk culture poses some unique problems of documentation. Indeed, this is hardly surprising given that it is both invisible and important as noted above. In one organisation they were comfortable that the risk

culture was good, but this was 'hard to demonstrate' especially for committees which tended to be highly 'action- oriented'. Respondents confirmed that the organisation was 'not good at writing things down and on process and formality. A greater sample of respondents agreed that, solvency 2 documentation requirements were substantively affecting underwriting decisions, i.e. making underwriters more risk-averse.

Documentation issues were also important in the use of tools and surveys. A number of respondents said that they used staff surveys, both general satisfaction surveys and specific risk attitude surveys.

Hoyt & Liebenberg (2011) find a positive relation between firm value and the use of culture in Enterprise Risk Management (ERM). They argue that culture in ERM promotes increased risk awareness and facilitate better operational and strategic decision making and better allocation of resources in a risk adjusted fashion.

Roeschmann (2014) conducted a study and found out that although risk culture is a recognised building block of corporate governance and a potential operational risk, what risk culture is and what role it plays in the risk management frameworks of insurers still remain vague. Consequently this lack of understanding limits the effectiveness of risk management. It was also revealed that risk culture is shaped by much more than just the tone from the top. The study concluded that, risk culture is a cognitive, dynamic concept with formal and informal aspects as well as thought and action interacting.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The discussion in this chapter relates to the data collection and data analysis methods considered for this study. These methods will enable the study to answer the research questions and achieve the objectives of this study. The discussion is organised in four parts. The first two parts discuss the research approach and strategy. The third and fourth parts discuss data collection (research population, sampling technique and research method) and analyses methods chosen for this study.

3.2 Research approach

There are generally two main ways to carry out a study namely: the deductive approach and inductive approach.

The deductive approach, as pointed out by Lewis et al. (2007) allows the researcher to develop a theory and hypothesis (hypotheses) and design a research strategy to test the hypothesis (hypotheses). This approach, they point out, is dominant in the natural sciences where laws provide the basis of explanation, permit the anticipation of phenomena, predict their occurrences and therefore allow them to be controlled. On the other hand, with the inductive approach, the researcher collects data and develops theory as a result of his/her data analysis, this approach enables human behaviour to be studied based on the context of behaviour. It thus allows the researcher to decipher the way human beings understand their social world Ghauri & Grohaug (2005). The study will benefit from the quality of the inductive approach as it will study a phenomenon in life insurance in a new and developing context, thus departing from the rigid

style of the deductive approach, which may limit the explanation of the phenomenon to a few variables. According to Easterly-Smith et al. (1991), this approach allows the use of small samples in a study rather than large samples accustomed to the deductive approach. In addition, researchers using this approach work principally with qualitative data and may use a variety of methods to collect these data in order to establish different views of particular phenomenon.

These advantages mentioned above, make the use of inductive approach appropriate for this study, because currently few or no theories relating to risk culture exist. This is because a developing concept such as risk culture makes it very difficult to advance robust theories since the phenomenon is still evolving. Further, using the inductive approach in research projects in the interim to study this concept, will allow data to be systematically accumulated about the concept or phenomenon. This may lead to the development of theories when hypotheses regarding identified variables are tested using the deductive approach.

3.3 Research strategy

The main purpose of this study is to explore the issues related to the impact of risk culture in risk management choices of insurers. It will thus follow exploratory study which will lead to valuable means of finding out 'what is happening; to seek new insights; to questions and to assess phenomenon in a new light (Robson, 1993). He further argues that this strategy is particularly useful if one seeks to clarify his understanding of a problem.

Ghauri & Grohaug (2005) identified three principal ways of conducting exploratory studies and these are:

- A search literature
- Talking to experts; or

- conducting focus group interviews

This study will combine two of the methods; a search of literature to identify developing themes related to risk culture and risk management choices, and structured interviews with insurers. This will enable the study relate to themes identified in literature with the probable response of insurers in Ghana and identify any possible deviations of Ghanaian insurance companies from these themes. Further, the two methods will make it possible to combine primary data and secondary data in this study

3.4 Data collection

This study will rely largely on primary data relative to secondary data. These are qualitative in nature and it is based on opinions of the research participants. For the purpose of this study, the term opinion means beliefs; attitudes or values expressed by participants as suggested by Rokeach (1968). The discussion on data collection will focus on the research population, sampling and research methods that will be employed in this study. Five employees were selected randomly from the underwriting departments of the eighteen life insurance companies in Ghana.

3.5 Research population

The study will focus on the insurance sector of the financial services industry as it explores issues related to the way insurers take risk and make decisions and how it enables them position themselves in selecting proper risk management strategies in their operating environment, such as the way they underwrite insurance contracts and choose investment portfolios in order to safeguard the solvency of the firm. The study as mentioned earlier will rely heavily on the opinions of two groups of individuals in the insurance sector namely: insurance underwriting department, risk and reinsurance department.

The opinions expressed by these individuals will be assumed to represent the position of the various institutions they represent on issues discussed during the data collection phase of this study. This is because the researcher employed guidelines necessary to gain official approval to undertake the data collections exercise using these individuals employing formal means of communication between the university and these institutions, introducing the researcher and the purpose of the study.

I. Insurance Underwriting Department

Insurance Underwriting Department by the nature of their responsibilities, appreciate the impact of risk culture in their operating environment could have on their performance and survival of the insurance firms. They also make valuable input into the future strategies of their firms and therefore better understand how their firms will position their operations in a risk culture environment.

II. Risk and Reinsurance Department

Risk department per their responsibilities check the progress of risk mechanisms in the organisation as to whether they are operating effectively and efficiently in their operations with respect to the purpose and values of stated risk culture in existence. In most cases they are responsible for ensuring that their firms acquire and deploy the appropriate culture values or internal controls for their operations, formulate and implement policies and strategies to manage risks and its associated challenges. Their opinions on issues related to culture and risk management choices will be useful to understand the themes guiding the study.

3.5.1 Sample and Sampling technique

The study used the life insurance institutions in the most recent survey of Ghana. Ghauri & Grohaug (2005) describes the sampling technique as follows

Random sampling technique was used to collect data from the claims and underwriting departments of eighteen life insurance companies. Five people were randomly selected from these departments. Therefore, data points were ninety respondents.

3.5.2 Research method

To explore the relevant issues to i

nsurance companies in the area of risk cultures. This study will employ qualitative semi-structured interviews to allow the research participants express their opinions on issues relevant to the study.

3.5.3 Structured interviews

These interviews use questionnaires based on predetermined and standardized or identical set of questions. The responses to these questions are usually recorded on a standardized schedule usually with pre-coded answer.

Robson (1993) further notes that, this type of interviews is best suited for descriptive research, which seeks to identify general patterns related to a phenomenon. It is also best suited for exploratory research to explain the relationship between two variables in a statistical sense.

The risk culture model is based on literature study, discussions with experts. This model was developed by the Institute of Risk Management (IRM) in the work of (Paalaneen, 2013). The starting point of the model is that the risk culture depends on individual aspects and organisational aspects. In the literature study the most important theories of both areas are

discussed. The risk culture model is the composition of the most important aspects of these two dimensions. The final stage level model emphasizes the areas that are seen to be the most significant and which cover the field of risk culture extensively enough. The structure of the model is kept simple in order to ensure its applicability in real organisational settings. Eighteen (18) life insurance firms were selected to answer to 30 statements about risk related issues. The dimensions of risk culture were interpreted to describe four independent areas where companies may differ. Using the four dimensions, we found out the impact of the risk culture on underwriting risk. These qualities convinced the researcher of the suitability of this interview method to this study, as it seeks to explore a sufficiently wide range of opinions on how risk culture impacts on risk management choices of Ghanaian insurers in their operating environment.

The interview with each selected insurance companies will cover issues relating to the existing culture strategies their firm may adopt to support risk culture, the possible response of the insurance industry (focusing investment portfolios and standards development), the potential opportunities presented by having a proper risk management culture and strategic challenges in this environment.

Interviews with the Risk and Reinsurance department will consider issues related to industry response to concept of risk culture, the operational risks and challenge their firm encounter in a risk culture environment.

3.6 Method of Data analysis

The data collected through questionnaire will yield qualitative data. The nature and complexity of this type of data implies that there are no set rules, formats or approaches to qualitative data analysis (Tesch, 1990).

The data analysis approach used in this study is two staged: Coding categories of the qualitative data and summarizing results of coded categories.

3.6.1 Questionnaire

An empirical study was conducted to help in identification of the dimensions. The study had three steps. In the first step a questionnaire was presented to 90 people in order to gather information about how different areas of the risk culture model are perceived. In the questionnaire a quantitative attribute-based measurement approach was used with a 5-point Likert scale. This scale was utilised because it is widely used and respondents readily understand it. (Aaker, Kumar & Day 2007; McDaniel & Gates 2006). Random sampling was used in collecting data in these institutions. A survey was conducted on eighteen life insurance companies with ninety (90) respondents, five from each company. Therefore the data points used for regression is ninety (90) data points. In the second step a factor analysis was conducted in order to create a limited number of dimensions that would describe different risk culture types. The questionnaire had 30 statements. Phrasing was as neutral as possible and all moral connotations were avoided. The aim of the questionnaire was to cover all the areas presented in the risk culture model and that the collected data would be used to do the third step which is a regression.

The respondents assessed how the statements reflected the assumptions and practices in their teams. The respondents have risk management, underwriting and claims, backgrounds. All respondents were from life insurance companies. All are working closely with some aspect of risk management. In total 90 questionnaires were sent and 89 answers were received. The questionnaire is presented in the appendix. The respondents provided answers to the questions by

scoring them with a score from 1 to 5. A score 1 presented strong agreement with statement and score 5 presented strong disagreement with the statement.

3.6.2 Coding categories in qualitative analysis

Creswell (1994) points out that one of the most important stages in analyzing qualitative data is identifying the categories that appear in the data. Coding is a common technique used to establish data categories in qualitative data Tesch (1990). Further claims that, it helps to re-organise and rearrange the data so it can be subjected to more rigorous analyses.

This process is elaborate and most suitable for cases where the researcher conducts the whole analysis process qualitatively and manually. However, it is not adequate when the researcher is seeking to identify frequencies of occurrence of category issues (Burnard, 1991).

This study, however, will seek to recognize the concept of risk culture relating to the impact of risk culture in the risk management choices of insurers from the questionnaires. Further the factor analysis applied in summarizing and interpreting data, requires a system for coding themes or categories as they are discussed during the interview sessions.

3.6.3 Frequency analysis

Lewis et al. (2007) remark that, one of the first ways of organizing raw data is to group scores or values into frequencies. Frequency analysis is used for reporting descriptive information from empirical research. Frequency tables are used to report the number of occurrence of each data variable. These frequencies can then be presented either in tallies or in percentages.

Frequency analysis can be used for both nominal and ordinal data and also numeric data Huberman et al. (2002). It can also be used to conduct elementary statistics on both subjective

and objective data. Further, it is useful for comparing and contrasting within groups of variables or across groups of variables (Lind et al., 1999).

In this study, frequency analysis will be used to analyze data collected in the form of opinions expressed by research participants (IUDs and RRD) during the interview sessions. The inputs for the frequency analysis are the data matrices developed during the coding phase of the analyses process. This analysis method is used to summarize results of data categories developed from the interview scripts. This will enable the study to identify the important issues to the insurers as they participate in the interview.

3.6.4 Factor analysis

The second step of the empirical part was an exploratory factor analysis in order to identify a small number of factors that could be used to describe different dimensions of risk culture.

The main target was not to study whether there is solid connection or likely causality between two or more variables. Instead the purpose was to reduce the number of variables without reducing too much explanatory power.

Factor analysis is a way to explain correlation between variables by presenting multiple variables with fewer composite variables or factors. The assumption behind the factor analysis is that several correlated observable parameters are actually determined by some unobserved latent variable (factor). The data used in factor analysis should be on an interval scale (i.e. difference between 1 and 2 is the same as the difference between 2 and 3). The data obtained from the questionnaire is on an ordinal scale. However, the data is assumed to approximate interval scale and thus factor analysis can be used.

In factor analysis a regression model between predefined number of factors and the variables (in this case scores of individual questions) is solved. The solution provides one potential set of factors. However there are infinite amount of potential sets of factors with each having different weights between parameters and factors. Description of factor analysis in general can be found e.g. in Hair et al. (2010) and Fabrigar et al. (1999).

The factor analysis was performed with the SPSS. The analysis was conducted to several different set of variables and different number of factors. The results are presented in the appendix.

3.6.5: Regression

Third step

A regression model $UNR_i = B_0 + B_1FM_i + B_2RP_i + B_3DM_i + B_4RF_i + \varepsilon_i$ was employed to find out the relationship that risk culture variables have on underwriting risk i.e. a firm risk taking behavior and control decisions.

In the model above:

FM_i *means Formality,* RP_i *means Risk perception ,* DM_i *means Decision making and* RF_i *means Risk focus,* ε_i is the error term and UNR means underwriting risk.

3.6.5.1: Justification of the inclusion of explanatory variables and how they are estimated

According to institute of risk management 2012, the components of risk culture has four variables and they are Risk focus, Decision making, Formality and Risk perception. The selection of the variables is based on dimensions that describe how organisations perceive and handle risk management related areas and cover ranges of selected areas in such a way

that a culture is in a single point of each dimension. The opposite ends of a dimension are mutually exclusive (e.g. slow and fast).The dimensions were constructed in such a way that they fulfill the following criteria:

- The dimensions cover all the important elements of risk culture,
- They are as independent from each other as possible (i.e. are not strongly correlated),
- They are easy to understand,
- They can be measured or assessed,

They are estimated using likert scale to extort the mind sets that impact the ability to take risk on underwriting risk and the solution provides one potential set of factors. However there are infinite amount of potential sets of factors with each having different weights/loadings between parameters and factors. Therefore initial solution is typically rotated in such way that is fulfills some desired criterion. Then further estimated using the highest factor loadings under each of the supposed variables to represent each variable for the regression analysis. Description of factor analysis in general can be found e.g. in (Cudeck, 2000).

3.6.5.2: How the independent variables affect the dependent variable.

The dependent variables (risk focus, risk perception, formality, decision making,) are qualitative models that must complement the independent variable (underwriting risk).without one of these, risk management using only the quantitative models become deficient. Therefore the independent variable enables us to put the proper underwriting tools in place for effective risk management.

3.6.5.3 Assumptions of factor analysis and linear regression

Testing of assumptions is an imperative task for the researcher. Utilizing multiple regression, or indeed any statistical technique. Serious assumption violations can result in biased estimates of relationships, over or under-confident estimates of the precision of regression coefficients (i.e., biased standard errors), and unreliable confidence intervals and significance tests (Chatterjee & Hadi, 2012; Cohen, West, & Aiken, 2003)

The assumptions of factor analysis and linear regression can be found in Multivariate Data analysis (seventh edition) written by Hair et.al (2010).

3.7 Limitations of Methodology

The major obstacles encountered with the research methodology were, the uncooperative attitude of many of the respondents to the questionnaires distributed due of their busy work schedule. Some employees contacted for access and data collection showed less interest of giving out data due to the sensitivity of the area of study. Factor Analysis is a complex and multi-step process. However factor analysis complexity did not ruin the results of the study but helped to determine the number of latent constructs underlying a set of variables (items), providing a means of explaining variation among variables, using a few newly created variables (factors), thus condensing information to define the content or meaning of factors.

CHAPTER FOUR

PRESENTATION, ANALYSIS, AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter provides analysis of data based on National Insurance Commission (NIC) annual report and on the data collected from questionnaires administered by the researcher to the workers in life insurance firms specifically the claims and underwriting departments. The data is mainly presented in relation to the influence of risk culture on underwriting risk (risk taking and control decisions). The results are mainly displayed using tables.

In all 90 questionnaires were distributed, 89 were accurately filled and returned. The 89 received questionnaires (representing 98%) response rate were analysed based on the research objectives and questions. Babbie (1995) points out that for a survey such as this study, a response rate of at least fifty percent (50%) is adequate for analysis and reporting. He further added that a response rate of sixty percent (60%) is good while that of seventy percent (70%) is very good. Therefore, a response rate of 98.0% raises no question for the analysis.

4.2 Descriptive Statistics

The descriptive statistics indicate the number of respondents to the entire research and also shows the extent of understanding of risk culture model. Eighteen out of nineteen life insurance companies responded to the questionnaire. It can be inferred that since the difference between the participants and non-participants was not that huge, the findings will be a perfect reflection of the views of the entire life insurance industry.

Table 4. 1 : Operations are controlled with detailed organizational controls and checks

Scale	Valid percent	Cumulative percent
Strongly Disagree	2.3	2.3
Disagree	2.0	4.3
Neutral	0.3	4.6
Agree	84	88.6
Strongly Agree	11.4	100
Total	100	

Source: Survey Data for the Study, 2015.

The table 4.1 above shows the survey respondents from the life insurance companies. 84% agree and 11.4% strongly agree that there are excessive controls and checks in their operations and just 2.3% strongly disagree and 2.0 % disagree that there are not much controls in their operations. Whereas 0.3% are neutral. Executives agree that well-defined operations and clearly laid down controls and checks are a critical component of effective risk governance. Eighty-four percent of survey participants indicated they are strengthening roles and responsibilities in their organizations by lying down controls and checks for operational activities. In their post-crisis assessments, many firms found confusion around risk oversight expectations and gaps in risk processes and responsibilities throughout their organizations. As a result, many have made, and continue to make, adjustments to their governance models to strengthen and clarify

responsibilities. For most firms, the front office has traditionally focused on revenue targets and the risk responsibilities have been confined to not breaching limits.

The problem is that, typically, the limits set for the front office did not address many of the risks now in the spotlight, such as conduct and compliance. But this is changing, and firms are launching active programs to realign the responsibilities for their three lines of defense, with the front office now taking responsibility for all risks, including conduct

Table 4. 2: Processes are well defined and detailed

Scale	Valid percent	Cumulative percent
Strongly disagree	2.2	2.2
Disagree	16.2	18.4
Neutral	0.5	18.9
Agree	58	76.9
Strongly Agree	23.1	100
Total	100	

Source: Survey Data for the Study, 2015.

The table 4.2 above shows the survey respondents from the insurance companies. 58% agree and 23.1 % strongly agree that one cannot do things in his own way, therefore processes are rigid. 2.2% disagree and 16.2% strongly disagree that process are not rigid whereas 0.5% are neutral.

Table 4. 3: Only front runners are deeply involved into decision making and have access to risk information.

Scale	Valid Percent	cumulative percent
Strongly Disagree	6.7	6.7
Disagree	27	33.7
Neutral	0.4	34.1
Agree	47.7	81.8
Strongly Agree	18.2	100
Total	100	

Source: Survey Data for the Study, 2015.

Table 4.3 above shows the survey respondents from the insurance companies. 47.7% agree and 18.2% strongly agree that not everyone is allowed in decision making or to have access to risk information. 6.7% strongly disagree and 27% disagree whereas 0.4% are neutral to the above statement. Forty-seven percent of respondents' report that certain risk information and decision making is made by front runners. The effect is that this approach does not enhance communications and does not raise awareness of risk values and expectations. Many agree that effectively instilling risk culture is a constant and repetitive process involving a variety of channels, tools, policies and procedures. The process should begin with a rigorous recruiting effort to bring on board the right people who are the best match — both culturally and technically — with the organization. From there, the culture must be reaffirmed formally and

informally through new-staff orientations, ongoing training programs, regular town hall meetings and events, CEO communiqués, written materials and manuals, and in general, prolific communications at all levels. Also there is no risk academy with courses on many types of risk that is open to all employees, from the risk areas to front-line staff consequently, making it impossible to include majority of employees in decision making or having access to risk information.

Table 4. 4: Decisions are made by the leader of the team without subordinate's consent

Scale	Valid percent	cumulative percent
Strongly Disagree	13.5	13.5
Disagree	29	42.5
Neutral	0.2	42.7
Agree	49.4	92.1
Strongly Agree	7.9	100
Total	100	

Source: Survey Data for the Study, 2015.

Table 4.4 above shows that 49.4% agree and 7.9% strongly agree that decisions are made by the leader which could be myopic since ideas come from an individual. On the other hand 13.5% strongly disagree, 29% disagree and 0.2% is neutral to the statement above. The message is loud

and clear from executives interviewed that embedding a strong and pervasive "risk view" — in which everyone throughout the firm is responsible for risk — is crucial to establishing a successful risk culture. Many believe a well-articulated risk appetite framework that is effectively cascaded throughout all strategy and business planning, risk policies and procedures, and performance and compensation decisions are the best expression of risk culture.

Table 4. 5: Risk assessments influence all decisions in the organisation done.

Scale	Valid percent	cumulative percent
Strongly Disagree	23.9	23.9
Disagree	48.3	72.2
Neutral	0.6	72.8
Agree	20.4	93.2
Strongly Agree	6.8	100
Total	100	

Source: Survey Data for the Study, 2015.

Table 4.5 above shows the survey respondents from the insurance companies. 20.4% agree and 6.8% strongly agree that risk assessments influence business decisions in the organization and 48.3 % disagree, 23.9% strongly disagree that risk assessments and decisions influence business decisions. Table above shows that, prevailing trust in quantitative models for risk measurement is shaken to its core and the repercussions are obvious to all those involved. This is because risk

assessment is hardly done by industry players before accepting risk of any kind. Apart from purely quantitative aspects, qualitative aspects and their extensive impact have largely been overlooked. The triggers for the financial market crisis were not the risk models themselves, but rather the (mis-)behavior of market participants and risk managers and their lack of risk awareness, which led to collapsing markets, substantial risks and finally to the known system-wide failures. Thus, the behavior-related, cultural design of a company's risk organization is a decisive factor for the stability of a financial institution. A sole focus on quantification models is no longer sufficient. This has forced supervisory authorities to concentrate on such qualitative and cultural aspects.

Table 4.6: Risk is evaluated using soft parameters

Scale	Valid Percent	cumulative percent
Strongly Disagree	8.0	8.0
Disagree	47.4	55.4
Neutral	0.4	55.8
Agree	40.8	96.6
Strongly Agree	3.4	100
Total	100	

Source: Survey Data for the Study, 2015.

Table 4.5 above shows the survey respondents from the insurance companies. 40.8% agree, 3.4% strongly agree that soft parameters (incentives, competencies, and reputation) are used to motivate employees to consider risk decisions, however 47.4 % disagree and 8.0% strongly disagree that incentives motivate employees to be risk conscious. Whereas 0.4 % are neutral. Consequently, risk culture supplements the existing (quantitative) risk management framework with behavior-related components and therefore depends on various aspects, such as a reputation, motivation ,company`s organizational culture, business model and the defined risk appetite, organizational structure, senior management and staff and, last but not least, the regulatory framework. The aim of risk culture is to close the gap between risk exposure resulting from the business model and the capabilities of the existing quantitative risk management. In order to account for the aforementioned levers, risk culture must be designed multi-dimensionally and according to the individual characteristics of each organization.

4.3: Exploratory factor analysis

The variables measuring the constructs used in the study framework were factor analyzed. In addition, variables with loadings of at least 0.5 and factors with a reliability threshold of 0.5 were selected for the analysis. According to Hair et al. (2010), factor loading of an item should be more than 0.5; therefore items with low loadings indicate that they do not interact well with other items. Table below presents loadings above 0.5 as indicated by Hair et al. (2010). Also, items with no loadings should be removed from the data set since it may not have influence on the dependent variables. In the initial exploration, all the thirty (30) variables measuring the model constructs were factor analyzed in an attempt to identify latent variables explaining the respondents' views on each of the factors, identify the relationship between different latent

variables, identify the smallest possible number of variables that measures the constructs to simplify the proposed framework, as well as explaining the inter-correlations among observed variables.

4.3.1 Varimax Rotation and reliability of the exploratory factor analysis (EFA)

As a preliminary purification measure, the thirty (30) variables were later rotated using orthogonal method of the Varimax rotation as the extraction method. The results revealed that the variables loaded perfectly onto four factors. From the output of the rotation, five items loaded highly on component 1 and were all related to Formality; component 2 also had three variables which were also related to risk focus; component 3 had two items which related to risk perception; the 4th component had nine items all relating to decision making. Only factors that met the minimum value of 0.5 as postulated by were accepted for further analysis. On the basis of these processes, 19 variable items remained in the final structure for further analysis. The results of the rotation for the independent variables have been displayed in table 4.7 below.

Table 4. 7: Further results from factor analysis

Rotated Component Matrix[a]				
	Component			
	Formality 1	Risk focus2	Risk Perc3	Decision making4
Q1	.674			
Q2	.524			
Q13	.567			
Q14	.558			
Q9	.584			
Q20		.626		
Q3		.631		
Q27		.611		
Q15			.732	
Q29			.606	
Q22				.717
Q8				.628
Q12				.602
Q5				.602
Q17				.595
Q4				.517
Q25				.615
Q30				-.736
Q26				.667

It is worthy to note that these numbers are essentially correlation coefficients, and therefore the magnitude of the loadings can be understood similarly. The loadings used in the analysis table are all high, which indicates that the extracted components represent the variables well.

Table 4. 8: Factor analysis assumption test.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.881
Bartlett's Test of Sphericity	Approx. Chi-Square	2638.090
	df	435
	Sig.	.000

Prior to the extraction of factors, the Bartlett test of Sphericity (Approx. Chi-square= 2638.090, df .435, sig. 0.000) and the KMO measure of sampling adequacy (Value of .881) confirmed that there was significant correlation among the variables to warrant the application of factor analysis. Only variables whose Eigen values were greater than one were selected (Malhotra & Birks, 2007).

Table 4. 9: Communalities of the factors

Communalities

	Initial	Extraction
Q1	.739	.673
Q2	.837	.821
Q3	.770	.730
Q4	.763	.605
Q5	.653	.506
Q6	.680	.551
Q7	.537	.109
Q8	.855	.745
Q9	.824	.680
Q10	.887	.803
Q11	.866	.783
Q12	.867	.495
Q13	.841	.685
Q14	.881	.804
Q15	.875	.798
Q16	.720	.533
Q17	.876	.738
Q18	.832	.720
Q19	.875	.767
Q20	.877	.847
Q21	.877	.824
Q22	.720	.657
Q23	.816	.659
Q24	.765	.513
Q25	.744	.535
Q26	.693	.557
Q27	.870	.655
Q28	.855	.671
Q29	.903	.542
Q30	.885	.573

Extraction Method: Principal Axis Factoring.

Communalities of the original variables were quite high. The factor analysis brought up four factors that represent the empirical dimensions in risk culture in the life insurance industry in Ghana.

Table 4. 10:Total variance explained by the factors

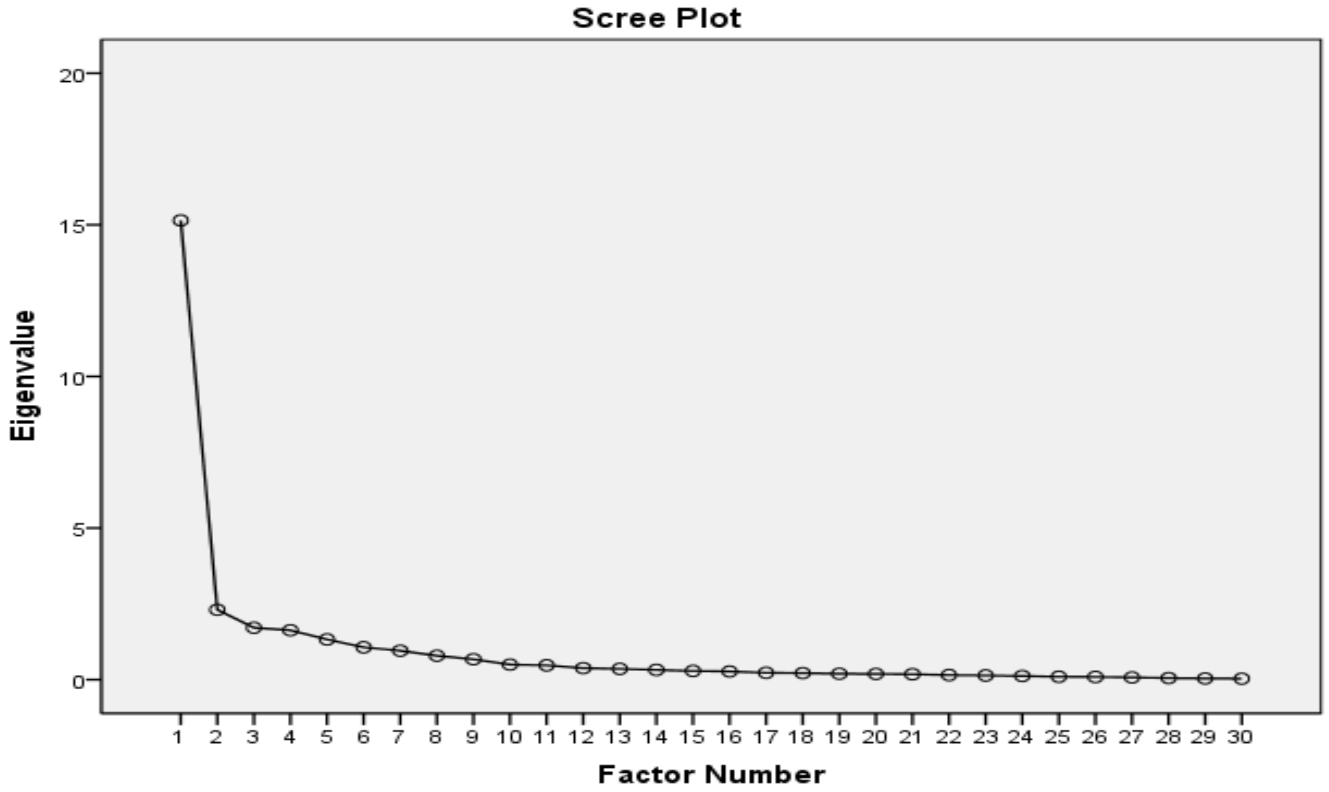
Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.144	50.479	50.479	14.816	49.387	49.387	6.990	23.301	23.301
2	2.306	7.685	58.164	2.038	6.792	56.179	6.789	22.631	45.932
3	1.712	5.707	63.871	1.395	4.650	60.829	3.621	12.072	58.004
4	1.630	5.433	69.304	1.332	4.442	65.270	2.180	7.266	65.270
5	.927	4.423	73.726						
6	.868	3.559	77.285						
7	.656	3.187	80.472						
8	.589	2.629	83.101						
9	.573	2.243	85.344						
10	.496	1.655	86.999						
11	.473	1.577	88.576						
12	.382	1.274	89.850						
13	.356	1.188	91.038						
14	.322	1.075	92.112						
15	.288	.960	93.072						
16	.271	.903	93.976						
17	.227	.757	94.732						
18	.217	.722	95.454						
19	.196	.652	96.106						
20	.190	.633	96.739						
21	.180	.598	97.338						
22	.152	.508	97.846						
23	.138	.460	98.306						
24	.122	.405	98.711						
25	.096	.321	99.032						
26	.090	.299	99.331						
27	.072	.240	99.571						
28	.054	.180	99.751						
29	.040	.134	99.885						
30	.035	.115	100.000						

Extraction Method: Principal Axis Factoring.

Four items on the table showed Eigen values greater than one. With the four factors the total percentage of explained variance was 65.270% and the four factors were also used in the multiple regression to represent each variable.

Figure 4. 1: Scree plot



A scree plot showing the Eigenvalues of the various factors.

4.4 Reliability of study instruments

Reliability test is employed to test the reliability of the various variables in the questionnaire. It is calculated as follows:$\alpha = \frac{K}{K-1}(1 - \frac{\sum_{i=1}^{K}\sigma_{Y_i}^2}{\sigma_X^2})$ Where σ_X^2 is the variance of the observed total test scores, and $\sigma_{Y_i}^2$the variance of component *i* for the current sample of persons, where K stands for the number of items. A compilation of the various alpha values is presented in Table 4.11 following; formality has a Chronbach's alpha of .546, risk focus was .242, risk perception .406, and decision making was .597. It can therefore be concluded that all the study variables recorded acceptable range of reliabilities except risk focus. However, very high reliability (0.95 or higher) is not necessarily desirable, as this indicates that the items may be entirely redundant.

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4. 11: Reliability Test

Variables	**Number of items**	**Cronbach's alpha**
Formality	5	.546
Risk focus	3	.242
Risk perception	2	.406
Decision making	9	.597

The goal in designing a reliable instrument is for scores on similar items to be related (internally consistent), but for each to contribute some unique information as well. Cronbach's alpha is useful where all the questions are testing more or less the same thing, called a "factor". If there are multiple factors then you need to determine which questions are testing which factors.

4.5 Empirical results

After the preliminary analysis, in which frequencies, percentages, KMO, Bartlett's sphericity test was conducted, and Communalities were calculated, factor analysis was conducted. Factor analysis was employed to reduce the dimensionality of the original criteria to a smaller number of factors by forming a linear combination of the original data while retaining as much variance as possible (Aaker , Kumar & Day 2007; Malhotra & Birks 2007).

Table 4. 12: Regression results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.419	.409		1.024	.309
	Formality	.320	.084	.314	3.802	.000
	Risk perception	.473	.081	.487	5.873	.000
	Risk focus	-.068	.088	-.063	-.773	.442
	Decision making	.210	.097	.191	2.179	.032

From the above table formality, Risk Perception and decision making have a positive

Relationship which means that clearly laid down controls and checks are a critical component of

effective risk governance, consequently strengthening the roles and responsibilities of

employees on risk culture however the limits set for the front office should address many of the risks now in the spotlight, such as conduct and compliance. Good decision making with the right people makes managing underwriting risk easy however only front runners are mostly involved in decision making The effect is that this approach does not enhance communications and does not raise awareness of risk values and expectations. Also, an individual's perception has a positive bearing on underwriting risk; therefore if culture is left vague in the organisation, it may not be managed in the light of institutional purposes. On the contrary, risk focus has a negative relationship on underwriting risk which connotes that no matter the incentives that an employee receives they may go beyond limits and boundaries for their own selfish gains, leading to gross misconduct of industry/market players. Finally the study sought to find the influence of risk culture on underwriting risk. It was revealed that three variables of the risk culture model were significant at a 5% significance level. Formality depicted a value of .000, Risk Perception also depicted a value of .000, Risk focus depicted a value of.442 and decision making depicted a value .032.

Table 4. 13: Model summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735[a]	.540	.518	.560

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.735[a]	.540	.518	.560

a. Predictors: (Constant), Formality, Risk perception, Risk Focus, Decision making

R squared is the coefficient of determination which tells us the variation in the dependent variation is due to changes in the independent variables .From the findings in the above table the value of the R^2 is 0.540 which is an indication that there was a variation of 54% on the underwriting risk (UNR) of insurance companies in Ghana, as at 2014. This was due to changes in the independent variables at a confidence interval of 95%. This shows that 54% changes in the underwriting risk of insurance companies could be influence by the risk culture that exists in the company. R is the correlation coefficient which shows the relationship between the study variables. The finding from table shows that there is a strong relationship between study variables as shown by 0.735.

Table 4. 14: Anova

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.302	4	7.825	24.955	.000[a]
	Residual	26.654	85	.314		
	Total	57.956	89			

		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.302	4	7.825	24.955	.000[a]
	Residual	26.654	85	.314		
	Total	57.956	89			

a. Predictors: (Constant), Formality, Risk perception, Risk focus, Decision making

Dependent Variable: UNR(underwriting risk)

From the ANOVA statistics above, the processed data, which is the population parameter, had significance level of 0.00 which shows that the data is ideal for making a conclusion on the population parameter as the value of significance (p-value) is less than 5%. The calculated F was greater than the critical (24.955>.000), and indication that risk culture, impacts on firms risk taking behavior and control decisions.

Also, the significance value was less than 0.05, an indication that the model was statistically significant.

4.6 Discussion of findings

The major purpose of this study was to determine the influence of risk culture on the underwriting risk of life insurance companies in Ghana. Risk culture is expected to impact on risk taking and control decisions in organisations (Pwc, 2014). In this thesis the underwriting risk symbolizes the risk taking and control decisions of the various insurance companies. The results of our analyses provide estimates of the true relations between the components of risk culture and underwriting risk, and the consequences of not paying attention to risk culture in risk taking decisions. As such, they allow us to evaluate what we know at this point about the awareness and education of risk culture, development, and consequences of ignoring risk culture in corporate culture in their line of risk taking and control decisions and also to what extent the evidence supports predictions made by the model. Moreover, our findings allowed us to find out if adequate controls and checks are in place to identify potential violations in order to guard against insolvency, and to suggest new directions and strategies for future research.

In analyzing survey responses, we see significant room for improvement in the following six areas:

Inadequate authority and influence of the risk function. There is widespread agreement that risk culture is a critical part of a successful financial institution, but insurers have yet to create a true seat at the table for the risk function. From table 4.5 72.2% of respondents assess that the risk function or assessment does not influence decisions in the organization. These assertions go to confirm the findings of PWC (2014); Bozeman et al. (1998).

Risk culture awareness and education lags behind. Managements have made progress in setting the right "tone at the top," but management actions—in setting appropriate risk standards and promoting desired behaviors—aren't living up to these communications. These assertions go to confirm the findings of PWC (2014); Power et al (2007). From table 4.3 above shows that cumulatively 65.9% agree that not everybody is allowed to take active part in decisions meaning

that, risk awareness and education is vested in a few people in the organization. The concept of involvement and awareness capability refers to a firm's ability to educate its workers on the culture in the organisation and to use this knowledge appropriately to guide its risk taking and control actions. Involvement means such participation that creates sense of ownership and responsibility. Sense of ownership implies stronger commitment to organisation (Denison, 1990). The concept of involvement addresses internal dynamics of an organisation and it is seen to help in change and provide flexibility. Involvement capabilities are connected to a firm's ability to use knowledge that can be obtained through formal and informal mechanisms from various personal and public sources. Both kinds seem to have positive connection to effectiveness.

Soft parameters are not considered in risk taking and control decisions (eg.incentives, reputation and competencies). Most insurers have not done enough to change the underlying incentives and consequences that promote the right risk behaviors—and deter the wrong ones. From table 4.6 above shows the response rate from the employees from the insurance companies. Cumulatively 44.2% agree that soft parameters (incentives) are used to motivate employees to consider risk decisions however 55.8 % assess that incentives are inadequate to deter misspelling and misconduct. These assertions go to confirm the findings of PWC (2014); (Bozeman et al., 2012; COSO, 2004).

Many respondents saw operations to be controlled and checked: this has a way of prompting employees on violations and wrong actions; however it has made many companies conservative in taking risk. Processes are well defined and detailed which in away gives no room for alteration promoting a culture of low risk-taking at the potential expense of achieving adequate returns. These assertions go to confirm the findings of Bozeman et al. (1998).

Decision making is taking up by few people in the organization. Many respondents confirmed that, many times it is the leaders or the front runners that are involved basically in decision

making, this could lead to myopic way of taking decisions. Decision making theories e.g. Lu et al.,2007 has shown that a single decision maker can base his or her decision on rules or algorithms though, it is not obvious that groups make better (or worse) decisions than individuals. The group decisions have potential to be better than individual decisions.

Many respondents also saw risk as a threat rather than an opportunity to make exploits for huge returns. It is confirmed from literature that the way an individual perceives risk has effects on the way it is handled and managed. Moral and ethical theories propose that morals, beliefs and values of individuals have great impact on decisions. Thus there can't be a purely rational decision maker. The individual takes three aspects into account when making decisions: utilitarian aspects, social aspects based on the norms of the social order and deontological aspects based on the beliefs and values of the individual/employee (Cook et al., 2007, p. 154-155) .The image theory assumes that individuals use three categories of awareness (images) to make decisions: knowledge about beliefs and values, knowledge about desirable future, and knowledge about plans to reach desirable future. The individual uses the knowledge either to decide whether he or she should take risk or be conservative in risk taking in risk decisions Noyes et al. (2012).

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATION

5.1 Introduction

The conclusion to the entire study is presented in this chapter. It provides the summary of the findings of the study, limitations, and the conclusion drawn from these findings, the recommendations for future research and recommendations for both practitioners and managers to adopt and apply to their businesses.

5.2 Summary of findings

The study was intended to establish the relationships between risk culture (formality, risk perception, risk focus and decision making) and underwriting risk as well as to find out the extent to which one's attitude and behavior can influence risk taking in the insurance market.

The achievement of these objectives was made possible using various statistical techniques. Descriptive statistics was used to analyse the raw data in order to provide a general overview of how the risk culture variables affects underwriting risk of life insurance firms in Ghana. Secondly, factor analysis was used to reduce the set of items contained in the questionnaire in order to maintain those with higher loadings for further analysis. Finally multiple regression analysis was used to establish the influence of the independent variables on the dependent variables of the study. The following are the summary of the findings:

- It was revealed from this study that life insurance companies in Ghana have controls and checks in place. However too much of the controls makes them conservative in risk taking, hence the findings of the study can be seen as a representative reflection of the industry.
- The study also showed that cumulatively 78.9% of employees agree that processes are rigid that is, processes ensure everybody operates in the same way.

- Most of the processes were defined and detailed which could cause formalization to go mad.
- Majority of the employees who participated in the study showed that risk assessment does not influence business decisions and decisions are made by people who do not use risk information.
- Majority of the employees who participated in the study showed that there are no proper incentives in place which motivate risk taking and control decisions.
- The study also showed that decisions are done in a myopic way. Most decisions were made by the leader.
- Subsequently, the study found that there exist a significant positive relationship between formality and underwriting risk. It was also established that there was a significant positive relationship between risk perception and underwriting risk. Similarly, a significant positive relationship was found between Decision making and underwriting risk.
- Surprisingly, there was a negative relationship between risk focus and underwriting risk.
- . Finally risk culture was found to have a significant influence on firms risk taking and control decisions.

In all, it was revealed that risk culture had a significant influence on the underwriting risk of firms in the sense that when the purpose/values of risk culture i.e. (substance) is highly up held over the "form" consequently leading to better behaviors and effective risk management practices across the industry.

5.3 Conclusion

The purpose of this study was to establish the extent of influence that risk culture has on underwriting risk that is, a firm's risk taking and control decisions. Risk culture has been shown

to play an important role in the risk taking and control decisions of organisation in managing their risk as. Very little is known about how culture in organisations affects one's attitude and behavior in the Ghanaian setting. Hence this study sought to bridge that gap. The thesis provides insight into areas that influence risk perception, risk focus and decision making. Understanding risk culture is the first step in improving risk management. In order to effectively improve risk management it is important to know what basic principles are influencing risk management. By studying organisations from the perspectives stated in the risk culture model one can learn how risks are seen and what the potential weak and strong points are. Understand peculiarities of risk management actions, identify potential problem areas. In sum improving on a firm's risk culture leads to the effectiveness of risk management framework consequently leading to improved risk communication, better strategic planning and strategy implementation, effective decision making process and better ways of allocating resources etc. The current dimensions fit well into the current context but it is possible that in some other context different dimensions would be better. Providing empirical connection between risk culture and underwriting risk should be taken as a well-grounded hypothesis. Further studies are needed to confirm or adjust the hypothesis.

5.4 Recommendations for management

The study was intended to assist in determining what managers can do to improve their risk management practices. If we expect to maintain a sustainable process, we must ensure that the right culture is in place or is moving in the right direction. It is possible to introduce the risk management methodology as part of the change agent of culture. However, to make the process more than just a formality, there must be a mature culture in place so as to maximize productivity.

When employees overcome the mental hurdles that stem from the influences on attitude and developing the proper balance of risk attitude critical to the success of a mature risk culture, it is important to note that culture is bidirectional and feeds back on attitudes influencing the same factors. Developing the right culture is probably the most critical step in becoming a mature organization with the best practice of risk management.

Hence management should endeavor to put in place policies that will ensure the employees protective frames, psychometric paradigms, heuristic biases and emotional literacy are well align with organizational goals and objective since each individual's risk attitude is affected by these. Decision making are a fundamental element of effective governance. Hence develop a decision rights structure that assigns decision-making permissions to the appropriate levels of accountability. Leaders' attitudes and behavior must exemplify the ethical behavior they want to infuse the corporate culture. Management should educate and build stakeholder awareness and commitment, by aligning employee incentives and consequences with desired risk behaviours. Insurers can encourage employees to take a well-balanced view about risk taking. Performance management can therefore support the desired risk culture when incentives and consequences are shaped by clearly established behavioral expectations. .

5.5 Recommendations for future research

This was a cross-sectional research design, which means that the study took place within a limited period of time. Risk culture is an actual and ongoing process in any organisation and perceptions might already have changed since this study was conducted. Thus the following areas should be studied in order to increase robustness and applicability of the model:

- Completeness of the model
- Coverage of the dimensions

The first area requires study about whether there are some aspects of risk perception, organisational culture or decision making that should incorporate into the model. This requires further theoretical and philosophical discussion about what is risk culture. It should be studied whether there are some aspects that are strongly connected to each other (e.g. Certain attitude towards risk is connected to certain organisational culture aspect or decision making structure). The second area needs empirical research concerning the dimensions of the typology. It is possible that the questionnaire used in this thesis missed some important aspects and over emphasised some unimportant aspects of risk culture. It should be studied how much effect the structure and content of the method used to obtain answer has on the results. These dimensions should be studied in order to find optimal set of dimensions. It is possible that the set of dimensions is not fixed but context-dependent.

5.6 Limitations of the study

The first area concerns overall applicability of the model. It should be studied how stable the dimensions are from group to group. If the dimensions vary significantly it is likely there are some underlying factors that should be used instead of varying dimensions. The study requires plenty of heterogeneous data. It is possible that the concept of risk culture can't be described with only four dimensions. In this case it might be feasible to identify larger set of dimensions and to use only selected dimensions in each individual study. This way the relevant parts of the concept would be used without unnecessarily simplifying the model.

Another major limitation of the study was the inclusion of only one outcome variable that is underwriting risk. However studies have shown that risk culture has effect on other outcomes other than underwriting risk which needs attention in both academia and the corporate world. The use of only one outcome variable limits our understanding of how important it is to improve risk management in the organisation.

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QUESTIONNAIRE

RESEARCH QUESTIONNAIRE
UNIVERSITY OF GHANA BUSINESS SCHOOL, LEGON
DEPARTMENT OF FINANCE
MPHIL RISK MANAGEMENTAND INSURANCE

TOPIC: THE IMPACT OF RISK CULTURE ON LIFE INSURANCE UNDERWRITING RISK IN GHANA.

The purpose of the study is to determine the impact of risk culture on firm underwriting risk(risk taking and control decisions) with focus on the life insurance companies in Ghana. Researcher is a final year student of the University of Ghana Business School. As part of the course requirements, the student is embarking on this study in partial fulfillment of a degree in an MPhil risk management and insurance.

It would be appreciated if you could complete this questionnaire to help gather primary data for this research. The information you will provide will be used mainly for academic purposes and your responses will be treated with absolute confidentiality. Thank you.

Agnes Asare

(Researcher/Student)

Please respond to the following questions by circling the suitable option using the given scales. Kindly answer all questions.

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	**2**	**3**	**4**	**5**

1.Risks are evaluated based on statistics and rules	**1**	**2**	**3**	**4**	**5**
2. Operations are controlled with detailed controls and checks	**1**	**2**	**3**	**4**	**5**
3.Most KPIs focus on financial performance	**1**	**2**	**3**	**4**	**5**
4.As much information as possible is gathered for decision making	**1**	**2**	**3**	**4**	**5**
5. Risk information is scarce to subordinates.	**1**	**2**	**3**	**4**	**5**
6. Risks are communicated openly	**1**	**2**	**3**	**4**	**5**
7. Decisions are based on intuition and judgements	**1**	**2**	**3**	**4**	**5**
8.Processes ensure that everybody operates in the same way	**1**	**2**	**3**	**4**	**5**
9.Risks are valued using well-defined methods and formulas	**1**	**2**	**3**	**4**	**5**
10.Risk figures (e.g. impacts) describe the actual values of risk	**1**	**2**	**3**	**4**	**5**
11.Processes are well-defined and detailed	**1**	**2**	**3**	**4**	**5**
12.Decisions are made fast	**1**	**2**	**3**	**4**	**5**
13.Explicit rules are used to select the most important risks an action	**1**	**2**	**3**	**4**	**5**
14.risk appetite (accepted level/target level of risk) is stated explicitly	**1**	**2**	**3**	**4**	**5**
15.Risks is something that must be avoided or mitigated	**1**	**2**	**3**	**4**	**5**
16.Level of risk related decisions is decided case-by-case	**1**	**2**	**3**	**4**	**5**
17.Risk assessments are not key to business decisions .	**1**	**2**	**3**	**4**	**5**
18. Risk information is created and reviewed by several groups	**1**	**2**	**3**	**4**	**5**
19.Actual targets and tasks deviate often from the business plan	**1**	**2**	**3**	**4**	**5**
20. Risk management focuses on mitigating risks	**1**	**2**	**3**	**4**	**5**
21. Risk management aims to maximize profits within the selected risk level	**1**	**2**	**3**	**4**	**5**
22. Decisions are not delayed – they are made based on existing information	**1**	**2**	**3**	**4**	**5**

Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**					
1	**2**	**3**	**4**	**5**					
23.Unit is part of a larger process					**1**	**2**	**3**	**4**	**5**
24. The main focus is on the next years					**1**	**2**	**3**	**4**	**5**
25. Decisions are changed rarely					**1**	**2**	**3**	**4**	**5**
26. Only those who are deeply involved into a decision participate to decision making					**1**	**2**	**3**	**4**	**5**
27. Risks are evaluated using "soft" parameters (e.g. reputation, motivation, competencies)					**1**	**2**	**3**	**4**	**5**
28.Risk management focuses on human factors					**1**	**2**	**3**	**4**	**5**
29 Risk is understood as a threat					**1**	**2**	**3**	**4**	**5**
30. Decisions are made by the leader of the team					**1**	**2**	**3**	**4**	**5**

Appendix

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Q22	.717	-.180	.111	-.143
Q8	.628	.189	.218	.246
Q12	.602	-.193		
Q3	.631	.121		
Q10	.484	.391		.194
Q24	.481		.155	.141
Q18	.476	-.159		-.227
Q11	.452	.283	.353	-.151
Q6	.449	.187	-.300	-.179
Q1	.325	.674	-.231	-.161
Q5	.140	.602		
Q17	.140	-.595		-.138
Q9	.479	.584		
Q2		.524	.165	.131
Q4		.517	.355	-.111
Q27	.480	-.495	.202	
Q16	.292	.408		-.128
Q19	.201	-.350		
Q7	.138	-.322	-.179	-.275
Q15	-.151		.732	-.140
Q20		.218	.626	.148
Q25	.118	-.100	-.615	.115
Q29	.223	-.320	.606	
Q13	.106		.577	.178
Q14	.402	.143	.558	.166
Q23	.190	.149	.403	.147
Q30	.142	-.361	.123	.736
Q26				.667
Q28		.255		.488
Q21	.316	.182	.407	-.487

a. Rotation converged in 10 iterations.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
Q22	.717			
Q8	.628			
Q12	.602			
Q3	.631			
Q10				
Q24				
Q18				
Q11				
Q6				
Q1		.674		
Q5		.602		
Q17		-.595		
Q9		.584		
Q2		.524		
Q4		.517		
Q27				
Q16				
Q19				
Q7				
Q15			.732	
Q20			.626	
Q25			-.615	
Q29			.606	
Q13			.577	
Q14			.558	
Q23				
Q30				.736
Q26				.667
Q28				
Q21				.621