

Joris Bendorius

BI Norwegian Business School  
Master Thesis

**- Cultural Distance impact on Subsidiary Control –**  
A study of foreign subsidiaries in Lithuania

Name of Supervisor:

**Prof. Carl Arthur Solberg**

Hand-in date:

**03.09.2012**

Campus:

**BI Oslo**

Exam code and name

**GRA 19003 Master Thesis**

Programme:

**Master of Science in International Management**

This thesis is a part of the MSc programme at BI Norwegian Business School. The school takes no responsibility for the methods used, results found and conclusions drawn.

**CONTENTS**

List of Figures.....	iii
List of Tables.....	iv
Abstract.....	v
1 Introduction.....	1
2 Theory & Existing research.....	3
2.1 Control.....	3
2.1.1 Definition.....	3
2.1.2 Process of Control.....	4
2.1.3 Types of Control.....	5
2.2 Culture.....	7
2.2.1 Definition.....	7
2.2.2 Elements of Culture.....	10
2.2.3 National Culture Concept & Models.....	13
2.2.3.1 Single dimension models.....	13
2.2.3.2 Multi-dimension models.....	14
2.2.4 Cultural Distance Concept.....	20
2.3 Prior Academic Research on Control and Culture Review.....	21
3 Research Model & Hypotheses.....	27
4 Methodology.....	30
4.1 Research Aim & Objectives.....	30
4.2 Research design.....	30
4.3 Data collection.....	31
4.4 Population & Sample.....	33
4.5 Data analysis.....	34
5 Empirical Results.....	35
5.1 Subsidiary Descriptive Statistics.....	35
5.2 Scale Reliability.....	38
5.3 Normality tests.....	39
5.4 Correlation Analysis.....	40
5.5 Multiple Regression Analysis.....	40

5.6	Moderation Analysis.....	45
5.7	Hypotheses Testing Results .....	48
6	Discussion.....	49
6.1	Synthesis of Empirical Research Findings and Literature Review.....	49
6.2	Implications for Managerial Practice.....	51
6.3	Limitations and Implication for Further Research.....	51
7	Conclusions .....	53
8	References .....	55
9	Appendices .....	59
9.1	Appendix 1: Survey Questions in English.....	60
9.2	Appendix 2: List of Variable Abbreviations.....	63
9.3	Appendix 3: Normality tests .....	64
9.4	Appendix 4: Correlation matrix .....	65
9.5	Appendix 5: Multiple Regression Analysis .....	66
9.6	Appendix 6: Moderation Analysis.....	69

**LIST OF FIGURES**

Figure 1 Interaction of Culture and Behavior (Adler & Gundersen, 2008) .....	9
Figure 2 Geert Hofstede's "Onion" model .....	10
Figure 3 Edgar Schein's Three Level Culture model.....	12
Figure 4 Lessem & Neubauer's Matrix (Lessem & Neubauer, 1994) .....	15
Figure 5 Kogut & Singh (1988) cultural distance index .....	20
Figure 6 Culture and control mechanisms (Harzing, 1999) .....	23
Figure 7 Model of MNC Control Selection (Hamilton Iii & Kashlak, 1999) .....	24
Figure 8 Conceptual research models.....	28

**LIST OF TABLES**

Table 1 Definitions of Control.....	4
Table 2 Definitions of Culture.....	8
Table 3 Countries of origin, cultural dimensions and cultural distance .....	35
Table 4 Regional Office countries.....	36
Table 5 Countries of direct reporting, cultural dimensions and cultural distance.	36
Table 6 Subsidiary descriptive statistics.....	37
Table 7 Scale reliability of variables .....	38
Table 8 Regression analysis summary.....	41
Table 9 Analysis of variance for dependent variables.....	42
Table 10 Summary of moderation analysis results.....	46
Table 11 Summary of hypotheses testing results .....	48

## ABSTRACT

**Purpose:** The purpose of this thesis is to study the relationship between use of different types of control mechanisms (output, process and social) and the cultural context (cultural distance between headquarters country and Lithuania, cultural distance between country of direct accountability and Lithuania, company's nationality and psychic distance) of foreign subsidiaries in Lithuania and relationship between subsidiary performance and control mechanisms (output, process and social) used to govern foreign subsidiaries in Lithuania.

**Research design/methodology:** A quantitative cross-section survey design based on a questionnaire and Hofstede's cultural dimensions. Proposed hypotheses are tested using multiple regression and moderation analysis.

**Findings:** The choice of foreign subsidiary control system in Lithuania is influenced by multiple factors of subsidiary's cultural context. Also Results show that there is a significant link between subsidiary's performance and control mechanisms exerted over the subsidiary.

**Research limitations:** Studies limitations are related to sampling and breadth of scope. Ability to generalize results is limited to one country setting (Lithuania), cross-sectional design and convenience sampling may imply reduced level of details of other influences on subsidiary control.

**Managerial implications:** Research findings can be useful to managers redesigning foreign subsidiary control systems, considering entry and maximizing foreign subsidiary performance in Lithuania.

**Originality/Value:** Impact of cultural distance and country of origin national culture on foreign subsidiary control and subsidiary performance has not been previously studied across foreign subsidiaries in Lithuania.

**Keywords:** cultural distance, psychic distance, subsidiary control, subsidiary performance

**Paper type:** Master Thesis

## 1 INTRODUCTION

It has been a long time since the Milton Friedman wrote “*Business of business is business*” in his work *Capitalism and Freedom* (1962) and in the face of globalization and development worldwide communication networks the famous quote does not lose its meaning but the word “*business*” implies so much more. As overseas operations are becoming more and more common practice for firm’s nowadays cultural differences cannot be left aside of business practice. Cross-cultural aspects and influences have reformed the notion of universal managerial practices and captured the focus of organizational studies.

The geographic position of Lithuania, connecting Western and Eastern Europe, was always favorable for international business. Entering the third decade of independence Lithuania is actively seeking new ways to participate in the global economy and international companies are invited to open their subsidiaries in Lithuania. Environmental uncertainty and stability ambiguity clouds the intentions of some firm’s to enter Lithuanian markets. Comprehensive studies on the impact of firm’s and subsidiary’ cultural contexts and effective subsidiary management can help reduce such environmental uncertainty and aid in increasing the performance of existing subsidiaries in Lithuania.

**The problem** is formed as question – how does cultural context impact control systems and performance of foreign subsidiaries in Lithuania?

**The aim of research** is to study the relationship between use of different types of control mechanisms (output, process and social) and the cultural context (cultural distance between headquarters country and Lithuania, cultural distance between country of direct accountability and Lithuania, company’s nationality and psychic distance) of foreign subsidiaries in Lithuania and relationship between subsidiary performance and control mechanisms (output, process and social) used to govern foreign subsidiaries in Lithuania.

**Research objectives** for the thesis are raised as follows:

- 
1. Analyze the concepts of control, national culture and cultural distance through a review of theoretical literature and academic research.
  2. Study the links between subsidiary cultural context, control and performance.
  3. Develop a theoretical model and hypotheses that represent the linkages between cultural context, control and performance of foreign subsidiaries.
  4. Empirically test the proposed research model and hypotheses in foreign subsidiaries in Lithuania.
  5. Analyze and compare the results with prior academic research and provide recommendations for managerial practice.

**Research design.** A quantitative cross-section survey design based on a questionnaire and Hofstede's cultural dimensions is chosen to study the proposed relationships between cultural context, control system and performance of foreign subsidiaries in Lithuania.

**Thesis structure** consists of five parts.

First, literature analysis is used to analyze the concepts of control, national culture and cultural distance. Study starts by analyzing defining concept of control and then identifying different types of control mechanisms. Next, concept of national culture and its elements are described. Followed by a literature review of various single and multi dimension models (such as Hofstede's Cultural Dimensions or GLOBE) developed to measure national cultures. Further in this part, academic research is reviewed to study the relationships between national cultures, cultural distance, control and performance.

Second, the purpose and problem of this research are introduced. A conceptual model and hypotheses for the empirical research are developed based on the findings of prior academic research and presented.

Third, methodological part of this thesis starts by identifying aim and objectives for the research of this thesis. Further, the chosen research design and methods for data collection and analysis are discussed and argued for.

Fourth, statistical analysis of survey data is carried out and hypotheses are tested using regression and moderation analysis. Results of the analysis are discussed.

Fifth, thesis ends by synthesizing findings of previous research and empirical results of this study. Implications for professional practices and recommendations for further research are presented.

## 2 THEORY & EXISTING RESEARCH

This section first focuses on defining theoretic construct of control and identifying different types of control mechanisms. Secondly, it explores the concept of national culture from an anthropological and management perspectives, describes different approaches and models of understanding and measuring national culture in organizational studies. Lastly, a review of existing academic research is used to explore the links between control and cultural distance.

### 2.1 CONTROL

In this part, various definitions of control will be discussed and generalized to form a definition of control that will be used further in this thesis. Afterwards processes of control are introduced to form a fundamental understanding of coordination in international organizations. Lastly, types of control, that will be one of the pillars of research in this thesis, are discussed.

#### 2.1.1 Definition

Definitions of control vary among many different authors. However, usually these definitions have similarities. Below are some examples:

AUTHOR	DEFINITION
Kenneth A. Merchant & Wim van der Stede (2007)	<i>“Management control influences employees’ behaviors in desirable ways and, consequently, increases the probability that the organization will achieve its goals. Thus, the primary function of management control is to influence behaviors in desirable ways. The benefit of management control is the increased probability that the organization’s objectives will be achieved.”</i>
John R. Schermerhorn (2011)	<i>“Controlling is a process of measuring performance and taking action to ensure desired results. Its purpose is straightforward – to make sure that plans are achieved and that actual performance meets or surpasses objectives.”</i>

---

John Child (1984)	<i>“Control within organizations is a process whereby management and other groups are able to initiate and regulate the conduct of activities so that their results accord with the goals and expectations held by those groups.”</i>
-------------------	---

---

**Table 1 Definitions of Control**

From the above definitions, it is clear that authors can define control in different ways and words but, however, the core ideas are similar. We can see that the main function of control is to influence employee behavior so that it is congruent with firm's objectives and goals. Therefore, it is possible to generalize that control is a process of management through which a firm influences employees to act in a desired behavior and achieve organizational goals.

### *2.1.2 Process of Control*

Control is a continuous process rather than a single operation. Process of control consists of four fundamental steps which are carried out sequentially. These steps are (1) establish performance standards; (2) measure actual performance; (3) compare actual performance with standards; (4) take corrective action if needed (Schermerhorn, 2011):

1. Establishing performance objectives and standards is the first step of control process. In this step managers must clearly describe the goals they wish to achieve and identify the key results that are to be monitored and which have significant effect on performance. In addition, these results must be measurable and clear standards must be set for accurate measurement.
2. Second step is to gather required information about performance results and use that information to measure the performance results according to the standards set in the first step of control process. Careful, timely and accurately documented information has great influence on the effectiveness of control and is the main focus in this step.
3. Comparing results with objectives is a rather straightforward process which joins together step 1 and 2. The procedure in this step is to calculate the difference between the desired results that were set in the first step

---

with actual performance data that was gathered in the second step according to the standards set up in the beginning.

4. Last step, if the measured actual performance is lower than desired results, is to identify the problems and their cause that prevented achieving the organizational objectives and take corrective actions to ensure that problems are eliminated and prevent them from occurring in the future. On the other hand, if the measured actual performance is higher than the desired results, managers may identify it as an opportunity to increase the desired level of performance in the future.

### *2.1.3 Types of Control*

Three general types of organizational control appear in research: output, process and social (Ouchi (1979), Kirsch (1996)). . These three groups of control mechanisms are distinguished based on their target of influence – results, monitoring behavior and values. However, research (Harzing, 1999) has also shown that there are a few authors who have distinguished a fourth type of control – personal centralized control which based on hierarchical authority and direct personal surveillance. Research part of this thesis is focused on the international relations of headquarters and foreign subsidiaries in MNCs. Therefore, we assume that transferring such personalized monitoring practices abroad is greatly ineffective due to transfer difficulties and high costs. The framework of three types of controls: output, process and social, has been empirically tested in a number of researches and will be used in this thesis as one of the focus points of research.

#### *Output control*

Output control is focuses on control mechanisms that measure specific outcomes of foreign subsidiaries. Output control mechanisms evaluate performance on the achievement of specified results and provide rewards if desired results are achieved or penalties if subsidiaries fail to perform as expected. Output control is exercised by using reporting systems and may range from rather simple aggregated financial data to detailed complex figures (Harzing, 1999) Distinguishing feature of output controls is that control mechanisms instead of specifying certain behavior or course of action they set and monitor desired outputs or goals providing employees some degree of autonomy (Harzing, 1999).

*Process control*

Process control focuses on how certain procedures are performed in foreign subsidiaries. This type of control mechanisms focuses on pre-specifying the expected behaviors or procedures how to perform and monitor certain operations in an impersonal and indirect way. The basic mechanism of process control involves direction and monitoring of subordinates; the information for task implementation is formalized and presented in rules, regulations, codes or programmes which can either provide a sequence of procedures or standards needed for task completion (Harzing (1999), Ouchi (1979)).

*Social control*

Social control mechanisms aim to influence the social interactions and values in MNCs. This category of control is relatively diverse and its control mechanisms are usually very informal, non-hierarchic and non-bureaucratic (Harzing, 1999). Social control mechanisms attempt to facilitate a corporate environment of shared values and understanding of MNC, its goals and roles of employees or organizational units. Social control mechanisms usually encompass high levels of interaction and communication between managers or organizational units. Essentially social control mechanisms may serve as an equivalent alternative solution to output or process controls in complex situations when the more “rational” forms of control become ineffective to be employed and monitored (Ouchi, 1979). However, differently from other types of control the effectiveness of social control greatly depends on a low turnover of employees (or stability of staff) because it targets attitudes, values and beliefs which develop slowly and require high levels of commitment and interaction (Ouchi, 1979). According to consolidated academic research (Harzing, 1999) three sub-groups of social control mechanisms can be derived: (1) socialization, sharing organizational values and goals, (2) informal lateral or horizontal exchange of information, non-hierarchical informal communication, and (3) formalized lateral or cross-departmental relations which may be facilitated through organizational structure.

At this point it is important to notice that one should view the above described control mechanisms as complementary rather than substitutes (Harzing, 1999). Regardless of their mutual aim to influence desired behaviors in employees

different combinations of control mechanisms may have synergy effects and be more effective than higher levels of single control type. Thus, MNCs may use a certain set of control mechanisms for different employees and in some cases use multiple mechanisms at once (Harzing, 1999).

## 2.2 CULTURE

Throughout history, explorers, philosophers, scientists have been fascinated by cultures, differences and similarities of various social groups, tribes, nations or civilizations, how they express themselves, interact and give meaning to different phenomenon. What is right and wrong? What is good and bad? The idea that the answers to these, at first glance, simple questions are universal and absolute has been superseded. In the modern world, the answer is – “it all depends on culture”.

Cultural studies have developed and specialized into many branches, from cultural anthropology to organizational culture, studying various aspects, from culture’s antecedents to its influences in modern life and business.

This section will, first, introduce the origins of concept of culture and discuss the core elements that distinguish different cultures from one another, second, different models of measuring culture will be explored as well as the concept and measurement of cultural distance will be introduced.

### 2.2.1 Definition

The contemporary word Culture is often used in daily life and it attains many different interrelated meanings depending on the circumstances it was used in. Origins of the word Culture stem from a Latin word “*cultura*”, literally meaning “*cultivation or agriculture*”, century a figurative meaning emerged in mid 15<sup>th</sup> “*cultivation through education*” and in 19<sup>th</sup> century “*intellectual side of civilization*” (Harper, 2012). Modern cultural studies provide various classifications and more refined definitions of Culture:

AUTHOR	DEFINITION
Oxford advanced learner’s dictionary of current English	“ <i>Way of Life 1. The customs and beliefs, art, way of life and social organization of a particular country or</i>

---

(2010)	<i>group.</i> ”
	<i>“Beliefs/Attitudes 4. The beliefs and attitudes about something that people in a particular group or organization share.”</i>
Edward B. Tylor (1891)	<i>“Culture is that complex whole which includes knowledge, belief, art, law, morals, custom, and any other capabilities and habits acquired by man as a member of society.”</i>
Kroeber A.L. and Kluckhohn C. (1952)	<i>“Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiment in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other, as conditioning elements of future action.”</i>
Geert Hofstede (2010)	<i>“Culture is the collective programming of the mind that distinguishes the members of one group or category of people from the other.”</i>

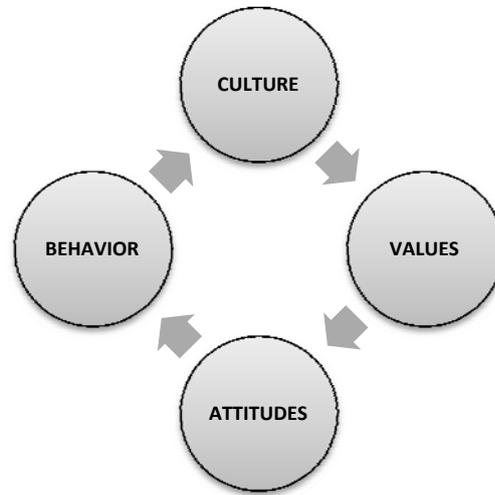
---

**Table 2 Definitions of Culture**

Despite the number of different definitions of culture, Kroeber A.L. and Kluckhohn C. alone in their work *Culture: A Critical Review of Concepts and Definitions* (1952) discuss over 100 definitions of culture, it is evident that there are some similarities (see Table 2). Therefore, Culture is a collective phenomenon of a given group of people who share and are distinguished by their beliefs, values, morals and attitudes, behavior patterns and way of life.

Culture has a dual aspect in a sense, first, it influences behaviors of people and, second, vice-versa it is influenced by how people of a culture behave and perceive reality. Consequently, this dual characteristic enables culture to evolve and reproduce itself. We usually assume that culture is inborn; however, we find good examples that a baby from Ghana adopted and raised by an Italian family will be

more Italian than resemble Ghana's culture. Therefore, we can come to a conclusion that culture is learned and not inherited. "Culture derives from one's social environment rather than from one's genes" (Geert Hofstede et al., 2010).



**Figure 1 Interaction of Culture and Behavior (Adler & Gundersen, 2008)**

Nancy Adler (2008) has developed a model (see Figure 1) that illustrates the dynamics of cultural reproduction. According to Hofstede (2010) and Lewis (2006) values are acquired and develop early in human life. Therefore, "many values remain unconscious to those who hold them" (Geert Hofstede et al., 2010) and may seem inherited. It is true that there is some basic "mental programming" that is inherited and common to everyone, usually referred to as human nature (e.g. anger at injustice, survival), as well as a part one's personality traits. However, values are actually learned, some of them even before we can remember, from our parents and the environment we are put in and encounter. Evidently, person's behavior is affected, on one hand, by inherited human nature and personality traits and, on the other, by culture that he learned from the environment one grew up in (Adler (2008), Hofstede (2010), Lewis (2006)). Coming back to Adler's model, "many values "Individuals express culture and its normative qualities through the values they hold about life and the world; values in turn affect their attitudes about the form of behavior considered most appropriate and effective in any situation; continually changing patterns of behavior eventually influence the society's culture" (Adler & Gundersen, 2008). Cultural learning process starts with development of values which are usually passed on from parents through their behavior that is observed and the way they

take care of you; later in life the learning process shifts to more cognitive learning through practices and environment that a person experiences (Lewis, 2006). Through this learning process one become's a part of a society and culture which is probably passed on to children repeating the cycle (Geert Hofstede et al., 2010).

### 2.2.2 *Elements of Culture*

From the origins of Cultural studies and explorations scholars have produced a number of classifications and categorizations of cultures. These different classifications of culture are based on a number of attributes or elements that describe and distinguish cultures. The evolution of cultural research has produced a number of different ways and sets of elements of culture.

Geert Hofstede in *Culture's Consequences* (2001) presents the "Onion" model of culture which denoted four core elements of culture which are linked through fifth sub-element that combines the latter four (see Figure 2):

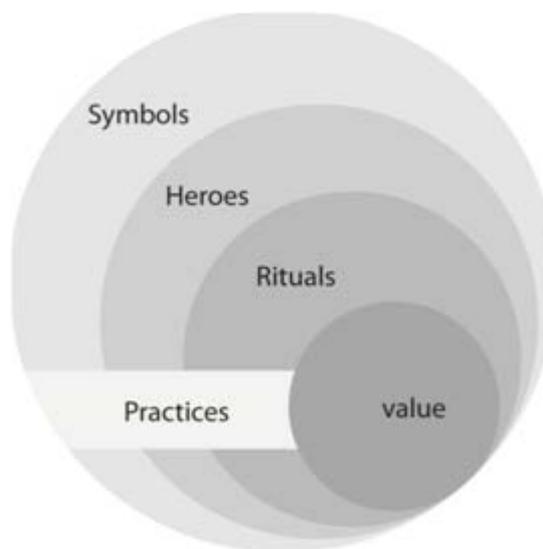


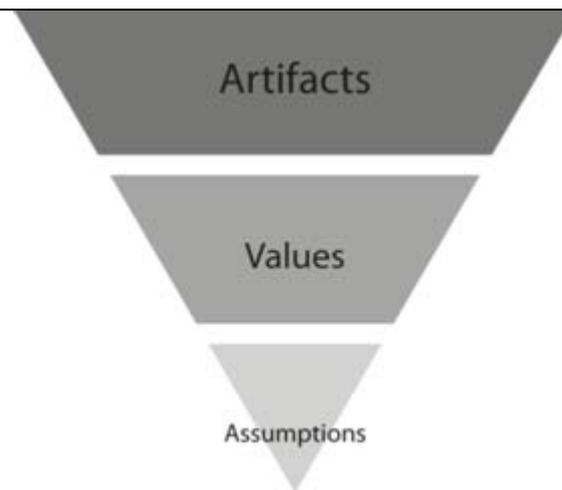
Figure 2 Geert Hofstede's "Onion" model

- *Symbols* can be tangible and intangible. They are objects, words or ideas that carry a particular meaning which is recognized by members of the culture. Symbols form the outer and seeming layer because old symbols can be replaced by developing new symbols.

- 
- *Heroes* act role-models in the culture. These cultural heroes are real or imaginary, alive or dead characters which embody inward or outward values and behaviors that are appreciated members of the culture.
  - *Rituals* “are collective activities, technically superfluous to reaching desired end, but which within a culture are considered as socially essential” (Geert Hofstede et al., 2010). Such rituals reinforce the relations within a culture.
  - *Values* form the center core of culture. Values are feelings, preferences towards particular ideas or behavior. Values are inherited as well as learned from our environment and acquired early in life.
  - Through *Practices* the above mentioned elements are expressed and may be observed by outsiders, however, the precise meanings remain hidden in the interpretations of insiders (Geert Hofstede et al., 2010).

Similar to the Hofstede’s “Onion” model is one developed by Lloyd Kwast. It consists of four layers that are arranged by the order and ease that they may be observed (Kwast, 1992):

- *Behavior* is the outermost layer. The questions that help us separate cultures in this layer are: What are people doing? How and why they are doing it in a particular way? What is acceptable?
- *Values* are intangible things or ideas that have particular importance in a culture
- *Beliefs* influence developing specific values and form the base of culture’s morality and standards of life.
- *Worldview* is the core of Kwast’s model. Worldview refers to the fundamental assumptions and concepts of life and behavior.



**Figure 3 Edgar Schein's Three Level Culture model**

Another model developed by social psychologist Edgar Schein (2010) is often referred to as the “iceberg” model or the “Three Levels of Culture” model (see Figure 3). As the latter name suggests it is comprised of three main levels or layers:

- *Artifacts*, first layer and the top of the iceberg, are tangible things that manifest culture, things that are visible and behavior that is observed but may be difficult to interpret.
- *Espoused Beliefs and Values* is the middle layer of the model it refers to the ideals, values, aspirations and rationalization of behavior in a culture. It considers intangible aspects of culture and, thus, it is the underwater layer of the “iceberg model” or the invisible aspects of culture.
- *Basic Underlying Assumptions* bottom layer of the model includes behaviors that are inherited, performed unconsciously. They form the core of a culture, guide the behaviors and feelings towards certain actions or phenomenon, and, therefore, extremely difficult to change.

Schein’s Three Levels of Culture model is mainly used to describe organizational cultures. However, in his book *Organizational culture and Leadership* (Schein, 2010) Schein uses this model to explore and define the concept of culture in general as well as organizational culture.

It is evident that although the models are different there are quite a few similarities among them. Layers or levels of these models are arranged in a way that the outer or top parts consider the tangible and visible features of culture,

---

whereas, core or bottom layers refer to intangible, heavily embedded values and assumption on behavior.

### 2.2.3 *National Culture Concept & Models*

Concept of National culture is similar to the general definition of culture but specifies that it refers to behavior, values and attitudes of a certain country or nation. Easily definitions can be transformed for national culture, for example, Hofstede's (2010) "National culture is the collective programming of the mind that is shared by members of a nation. "This mental programming shapes the values, attitudes, competences, behaviors and perceptions of priority of that nationality" (Morden, 1999).

In the past couple of decades, when development of worldwide communications made the world seem smaller and with the ever increasing number of multi-national corporations the impact of national culture and cultural differences has attracted particular interest in organizational studies. Facing cultural diversity scholars have focused on national culture influences in organizations and management theories, as Hofstede (2010) notes it is impossible to sure that theories developed in one cultural context can be successfully transferred and be universally valid in other countries. Models of national culture developed by Hofstede, Hampden-Turner, Fukuyama and others provide knowledge and experience about national cultures and are prerequisite to inter-cultural understanding and effective adoption of management practices in a multicultural environment, consequently, leading to successful performance (Morden, 1999).

Models of national culture can be classified into 2 categories: single dimension and multi-dimension models. Single dimensional models (Hall, Lewis, Fukuyama) use one variable to describe national cultures, whereas, multi-dimension models (Hofstede, Hampden-Turner & Trompenaars, Lessem & Neubauer) use a set of variables that eventually define national cultural characteristics (Morden, 1999).

#### 2.2.3.1 *Single dimension models*

##### *High vs. Low trust cultures*

---

Hall (1977) identifies high and low context cultures. National cultures are described according to the manner people seek information and knowledge in their decision-making process (Morden, 1999). In high context cultures individuals depend on their peers for information and associations with the object of decision; in low context cultures people use research and technical data to get information and make the decision (Hall, 1977).

#### *Mono-chronic vs. Poly-chronic cultures*

Culture may be defined as mono-chronic and poly-chronic (Lewis, 2006). Mono-chronic cultures tend to concentrate on one thing at a given time and time is considered as a valued resource, on the contrary, poly-chronic cultures attempt to do a number of tasks usually in an unplanned, opportunistic manner and feel unconstrained by time (Morden, 1999).

#### *Low vs. High Trust cultures*

Fukuyama (1995) analyzes cultures in terms of trust. His studies define low and high trust cultures. High trust cultures exhibit flexibility, responsibility delegation and “ability to spontaneously generate strong social groups” (Morden, 1999), in contrast, low trust cultures tend to isolate themselves in strong families with low trust between unrelated individuals (Morden, 1999).

#### *2.2.3.2 Multi-dimension models*

##### *Hampden-Turner & Trompenaars model*

Hampden and Trompenaars (1994) state that to understanding of culture lies with the construction process of the value systems. To explore cultures Hampden and Trompenaars develop a model that identifies 7 value systems or *seven value dilemmas*, solutions to these dilemmas provide insight about the cultural differences that exist between nationalities (Morden, 1999).

- *Making Rules and Discovering Exceptions*. Universalism vs. Particularism is the first dilemma. It explores the balance between codified and formalized operations and ability to recognize and deal with unique situations (exceptions) which require changes and innovation (Morden, 1999).
- *Constructing and Deconstructing*. Analyzing vs. integrating, “processes may require either or both (1) the analysis of concepts or phenomena into

their constituent parts; and (2) their integration into whole patterns, relationships and wider contexts” (Morden, 1999).

- *Managing Communities or Individuals* dilemma defines the relationship between the directions of focus considering priorities of communities vs. individuals (Hampden-Turner & Trompenaars, 1994).
- *Internalizing the Outside World* defines culture’s relationship with the external environment and its influences; as well as how does members of that culture react to the external factors – positively or defensively (Morden, 1999).
- *Synchronizing Time Processes* explores how time is perceived and used (Hampden-Turner & Trompenaars, 1994). Two aspects describe this value dilemma: first, length of time horizon and speed or synchronization (Morden, 1999).
- *Achieved vs. Ascribed Status* identifies whether status in a culture is assign according to achievements or it is ascribed or inherited as a result of other qualities.
- *Equality vs. Hierarchy* “value sets give different emphasis to the establishment of hierarchical order and authority, or the achievement of equality” (Morden, 1999).

#### *Lessem & Neubauer model*

Lessem and Neubauer (1994) by studying national culture impact on management in European countries have developed a model which portrays national culture as balance between four perspectives or forces working on 2 axis (see Figure 4).

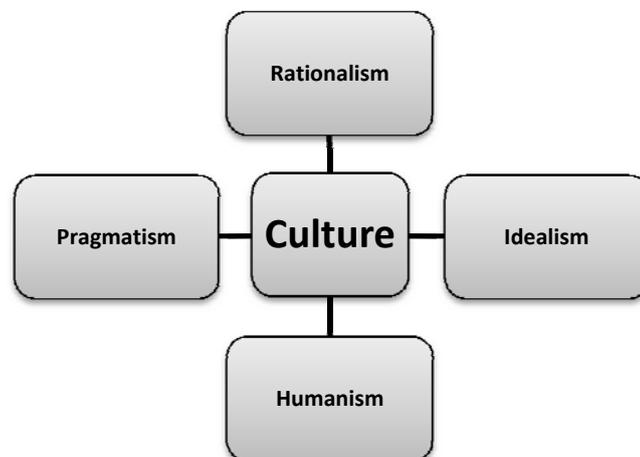


Figure 4 Lessem & Neubauer's Matrix (Lessem & Neubauer, 1994)

On one axis, *Rationalism* is defined to regard reason over feeling or experience, in contrast, *Humanism* focuses on communal relations and social life, equality (Morden, 1999). On the other, *Pragmatism* is dominated by empirical and experiential orientations, self-help and self-management, whereas, *Idealism* is systems oriented, considers collectivism, cooperation and development processes – things in its highest perfection (Morden, 1999).

### *Hofstede's model*

Geert Hofstede (2010) states that there are “true reasons for differences in thinking, feeling, and acting between countries”. To understand and measure these differences it is best to focus research on values, rather than practices, which are a more stable element in culture (Geert Hofstede et al., 2010). To describe, measure, and interpret the set of values of a country Hofstede developed model of national culture that includes 5 dimensions. Cultures receive a score for each dimension of the model and the unique set of scores is used to describe a profile of national culture of a country.

- *Power Distance* defines the unequal power or authority distribution among members of a culture and how people handle these inequalities. For example, in cultures with high power distance hierarchy is expected and people accept their status and inequalities (Geert Hofstede et al., 2010).
- *Collectivism vs. Individualism* is opposite extremes of values. Individualistic cultures exhibit weak relations among individuals and people are expected to look after themselves and closest relatives, in contrast, collectivism is defined by tight societal relationships and looking after among members as well as unquestionable loyalty to these societies (Geert Hofstede et al., 2010).
- *Femininity vs. Masculinity* “identifies the sexuality of roles in societies” (Morden, 1999) and “preference for achievement, heroism, assertiveness and material reward in societies” (Geert Hofstede, 2012).
- *Uncertainty Avoidance* identifies how people uncomfortable feel about uncertainty one’s future and, primarily, how people handle risk and the impossibility to predict future (Geert Hofstede, 2012).
- *Long-term vs. Short-term Orientation* defines peoples focus and perception of time and virtue. Short-term oriented cultures are normative

---

in thinking, highly respect traditions and show little tendency to focus on the future (Geert Hofstede et al., 2010). Whereas, long-term oriented cultures “believe that the truth depends on the situation, context, time and show ability to adapt traditions to changed conditions, propensity to save and invest, and perseverance in achieving results” (Geert Hofstede, 2012).

The model was developed in the 1980’s when Geert Hofstede studies survey data about values of people working in IBM in over 50 countries. Analysis showed that there are there are issues common to all people but to which solutions differ between countries (Geert Hofstede et al., 2010). It confirmed Alex Inkeles and Daniel Levinson’s original suggestions of common basic problems among human beings (Geert Hofstede, 2001). These common problems found in the analysis of IBM that correspond to the first four dimensions of the model. Fifth dimension was added later after additional study (Chinese Value survey) where three dimensions correlated with IBM dimensions but the fourth dimensions corresponded to values of orientation to past, present or future; thus, the last dimension was labeled Long-term vs. Short-term orientation.

#### *GLOBE model*

Global Leadership and Organizational Behavior Effectiveness (GLOBE) model was conceived by Robert J. House in 1991. A multi-cultural team of scholar developed questionnaire of several hundreds of items that were used to measure nine cultural attributes or dimensions: five dimensions correspond to Hofstede’s model and additional four were developed by the team.

- *Uncertainty Avoidance* correspond to the same dimension in Hofstede’s model and defines the degree of relying on rules, rituals and traditions to avoid uncertainty and uncomfortable situations (House, 2004).
- *Power Distance* is derived directly from Hofstede’s model measures the acceptance of unequal power distribution and hierarchical structures (House, 2004).
- *Institutional Collectivism*, similarly to Hofstede’s dimension, defines the degree of collective resource distribution and action that is encouraged and rewarded by institutions or society (House, 2004).

- 
- *In-Group Collectivism*, similarly to Hofstede’s dimension, “ is the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families” (House, 2004).
  - *Future Orientation* is similar to Hofstede’s Long-term vs. Short-term orientation dimension and measures how much individuals are future-oriented, plan and invest in the future (House, 2004).
  - *Gender Egalitarianism* considers the degree of sex equality (House, 2004).
  - *Assertiveness* define social relationships in terms of assertiveness, confrontation and aggressiveness (House, 2004).
  - *Performance orientation* considers the degree of use of performance based rewards and encouragement for improvement and performance (House, 2004).
  - *Humane Orientation* “ is the degree to which individuals in societies encourage and reward individuals for being fair, generous, caring and kind to others” (House, 2004).

#### *Criticism of Hofstede’s Dimensions of National Culture*

Choice of national culture model depends on the type of research and scholars preferences. However, Hofstede’s pioneer model has emerged as the more popular model in cross-cultural research and fame does not come without criticism. Consequently, Hofstede’s model, Dimensions of National Culture, has received criticism and competition, most recently in comparative reviews with GLOBE model.

McSweeney (2002) in his critique of Hofstede’s model of national culture claims that Hofstede has failed to capture the concept of national culture as we understand it. He further states that the model is based on limited and false assumption that attempt to characterize culture and national culture should not be quantitatively measured (McSweeney, 2002). McSweeney’s criticism is based on a notion of national uniformity and that culture plays no role in behavior between individuals of different cultures (McSweeney, 2002). A forward critique (Williamson, 2002) identifies McSweeney’s criticism is systematically flawed itself and has insufficient evidence to disprove Hofstede’s model and that “an a priori assumption about uniform national culture is inconsistent with positivist epistemology and Hofstede’s empirical findings. However, Williamson (2002)

---

identifies that Hofstede's and other models may be challenged and notes three warnings to Hofstede:

*“(1) there is the danger of assuming that all members of a culture homogeneously carry the same cultural attributes; (2) seeing individuals as ‘cultural dopes’, about expecting individuals’ values or behavior to be wholly determined by their cultural background; (3) third danger is of confusing scores for cultural dimensions with cultural constructs for which they are but approximate measures” (Williamson, 2002).*

In addition, Jones (Jones, 2007) criticizes Hofstede's work on several occasions: relevancy, cultural homogeneity, national divisions, political influences, being out-dated, having too few dimensions, and statistical integrity. Jones (2007) argues that Hofstede's model uses too few dimensions and fails to capture the full profile of national culture and, further, discusses that the situation may have changed from the time of Hofstede's original research, and that political influences (such as Cold War) may have biased the research data. However, Jones (2007) recognizes Hofstede's work as ground-breaking tool for further cross-cultural studies.

Another group of critiques can be identified which compares Hofstede's Cultural dimensions with the GLOBE model of national cultures (Leung (2006), Smith (2006), Javidan et. al. (2006)). Critics describe Hofstede's Cultural Dimensions as one of the most influential framework in international management research, however, it is challenged by the scale and complexity of the GLOBE project (Leung, 2006). Scale of GLOBE project, in senses of dimensions and data collected, is put in contrast to Hofstede's research challenging Hofstede's work of being incomplete and limited to capture all aspects of national culture. GLOBE has disproved the false assumption that all dimensions have been discovered (Javidan et al., 2006). In his defense, Hofstede (G. Hofstede, 2006) argues that GLOBE model is far too complex (uses 18 items to describe national cultures) and notes there is significant inter-correlations between dimensions as well as he questions the misleading theoretical assumption that were used to develop the nine dimensions (G. Hofstede, 2006). Furthermore, Javidan (2006) contests Hofstede's criticism on the grounds that Hofstede's critique lacks evidence under

the theoretical reasoning, and describes GLOBE as an evolution of Hofstede's original model (Javidan et al., 2006). In conclusion, Smith (2006) in his article overviews both, Hofstede and GLOBE, approaches to national culture. Hofstede's model of national cultures and GLOBE are useful tools describing national characteristics but achieve it in slightly different ways; however, both models have inherent risks and ambiguities (Smith, 2006).

#### 2.2.4 *Cultural Distance Concept*

Concept of cultural distance refers to the differences that exist between members of two different cultures. As mentioned in previous section, these cultures can be of countries, organizations or any societal groups and cultural distance can be employed to define the difference between any of them. According to Hofstede (2010), cultural difference may even exist within cultures between genders, generations or social classes. Culture shock is a good example of existing cultural distance: when people travel to exotic countries they are confronted with members of other cultures whose behavior or attitudes can seem immoral and completely strange and this goes vice versa.

In organizational studies cultural distance is defined as “the extent to which different cultures are similar or different” (Shenkar, 2001). A key problem in business research is the measurement of cultural distance. There is no unified solution to measuring cultural distance and the instruments vary depending on researchers' preferences and topic of study. However, following approaches measurement of cultural distance are popularly used in academic research:

First, Kogut & Singh (1988) in their study of entry modes in US market develop a an index of cultural distance (see Figure 5) which is calculated by using scores of Hofstede's cultural dimensions. In the index  $I_{ij}$  represents the score of dimension  $i$  of country  $j$ ,  $I_{ic}$  – score for country  $c$ ,  $V_i$  stands for variance in dimension  $i$ .

$$CD_j = \sum_{i=1}^4 \frac{(I_{ij} - I_{ic})^2 / V_i}{4}$$

**Figure 5 Kogut & Singh (1988) cultural distance index**

---

Second approach to measuring cultural distance is psychic distance. The construct of psychic distance was employed in the studies of Bello & Gilliland (1997) and Solberg (2008). Psychic distance “assesses the problems a firm encounters as a result to its ignorance of socio-cultural aspects of a foreign market” (Bello & Gilliland, 1997) and measures cultural distance at an individual level of research unit, not at a national level.

### **2.3 PRIOR ACADEMIC RESEARCH ON CONTROL AND CULTURE REVIEW**

In face globalization and rise of multi-national corporations, headquarters – subsidiary relations received considerable attention from academic researchers. Various organizational aspects are studied to answer the questions of international ventures: first, how does the cross-cultural context of the company affect management and performance of its subsidiaries? second, how should a company take these influences into account when managing its subsidiaries in order to maximize performance? To answer these questions links between national culture, cultural distance, foreign subsidiary control and performance are examined in existing academic research.

The influence and effects of cultural differences on organization management has captured the focus of academic research. Numerous studies have explored relationships of cultural distance with a broad range of organizational aspects. A persisting issue that is researched is the effectiveness of governance of headquarters – subsidiary relationships and subsidiary performance.

In previous studies of subsidiary governance there is no unified approach to measuring the element of control. Subsidiary control can be defined by various aspects or sets of tools used According to Wilkinson (2008) control is denoted by the ratio of expatriates working the subsidiary and ownership level. Whereas, mainstream research denotes control by the use of different control mechanisms: results (output), process (bureaucratic) or social (clan, cultural) (Harzing (1999), Hamilton & Kashlak (1999), Kirsch (1996), Ouchi (1979)).

Effects of cultural distance on foreign subsidiary control attracted particular focus academic studies (e.g. Hamilton (1999), Yaprak et. al. (2006), Schlegelmilch et.

---

al. (2002)). According to Wilkinson et al., (2008) existing research on cultural distance and foreign subsidiary control is split in two conflicting streams, both of which are supported by theoretical and empirical studies: (1) increasing cultural distance influences organizations to increase the subsidiary control, (2) increasing cultural distance relates to lower degree and loosening of control.

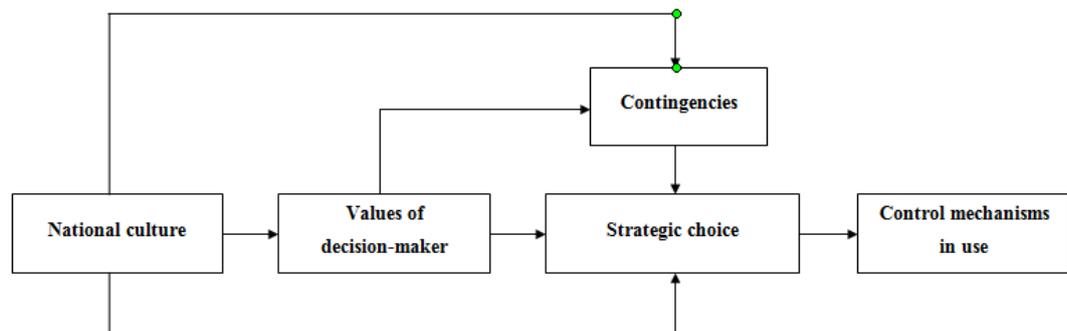
First approach to the links between cultural distance and subsidiary control uses agency theory and transaction cost theory as its theoretical basis which also gives reason for the need of control. In Transaction Cost theory international firms seek effective resource utilization facing three key issues: (1) asset specificity, (2) frequency of transactions and (3) uncertainty (Welch, Benito, & Petersen, 2007). Therefore, headquarters attempt to maximize operational certainty in relations with foreign subsidiaries through higher levels of control (Wilkinson et al., 2008). Moreover, Positivist agency theory focuses on identifying governance mechanisms that effectively limit agent's opportunistic behavior (Eisenhardt, 1989). Two main issues in agency theory are: (1) conflict between principal and agent goals and (2) difficulty to fully monitor the actions of the agent (Eisenhardt, 1989). Transaction cost and agency theory provide a solid theoretical base to assume that international organization will use increased levels of control in foreign subsidiaries to minimize the operational uncertainty in general as well as influenced by cultural differences. However, specific control mechanisms may have different relationships with cultural distance.

Second approach views subsidiary autonomy or loosening of control as a tool to reduce uncertainty and costs in situations of increased cultural distance (Wilkinson et al., 2008). A good example of this stream of research is the study by Kogut & Singh (1988). Kogut and Singh (1988), in their research of 228 entries to USA revealed that there are links between entry mode and cultural distance. They tested and proved the validity of Hofstede's dimensions to measure cultural distance, as well as developed an index to calculate cultural distance (Kogut & Singh, 1988). In their study of choice of entry modes Kogut and Singh (1988) find that cultural distance has significant influence in firm's choice of entry mode: there is a significant relationship between choice of control mode and uncertainty avoidance level in the country of origin. Results show that joint-venture entry mode dominates acquisitions and wholly owned subsidiaries in situations of

greater cultural distance. Results also show that firm's choice is affected by the goals of minimizing uncertainty and maximizing control of foreign operations (Kogut & Singh, 1988)

Despite the relationship (positive or negative) between cultural distance and foreign subsidiary control, by studying the use of expatriates and subsidiary ownership levels as forms of control Wilkinson (2008) found evidence that national cultural impact on foreign subsidiary control diminishes when subsidiary ages – organization gathers local knowledge and due to the process of acculturation (Wilkinson et al., 2008). Nonetheless, his research suggests that bigger cultural distance is positively linked to higher levels of control, use of expatriates which, in addition, may compliment process and social controls through monitoring, transfer of values and acculturation.

Harzing (1999) in her book *Managing Multinationals* focuses on the influences of various firm-specific factors: country of origin, industry, organizational model applied, firm size, level of multi-nationality and heterogeneity, on the choice of control mechanisms used to govern foreign subsidiaries of multi-national organizations.



**Figure 6 Culture and control mechanisms (Harzing, 1999)**

Research (Harzing, 1999) has proved that nationality affects the choice of control system and that “country of origin has high explanatory power concerning the type of controls used” (Harzing, 1999). However, Harzing (1999) explored the nationality impact on control and did not separately test the effects of national culture, economic, political or other country-specific environmental factors on the choice of control. Nonetheless, judging from her model about culture and control

mechanisms (see Figure 6) there is strong reason to believe that national culture has significant impact on control choice of international firms.

Research about consequences of relationalism in 290 US exporter – distributor relations (Bello, Chelariu, & Zhang, 2003) shows that there is evidence, apart from other findings, to that psychic distance has effect in cross-cultural relationships. However, Bello (2003) notes that psychic distance has significant positive relationship with output controls but not related with bilateral control mechanisms. In addition, Bello (2003) finds that distributors show higher performance and achievement of goals when close relational ties are present.

Cultural distance has many effects impacting management of international organizations. Increasing cultural distance gives rise to ambiguity and measurement of performance of a foreign subsidiary, Hamilton (1999) introduces a research model to investigate the national factors of host country that influence choice of control systems:

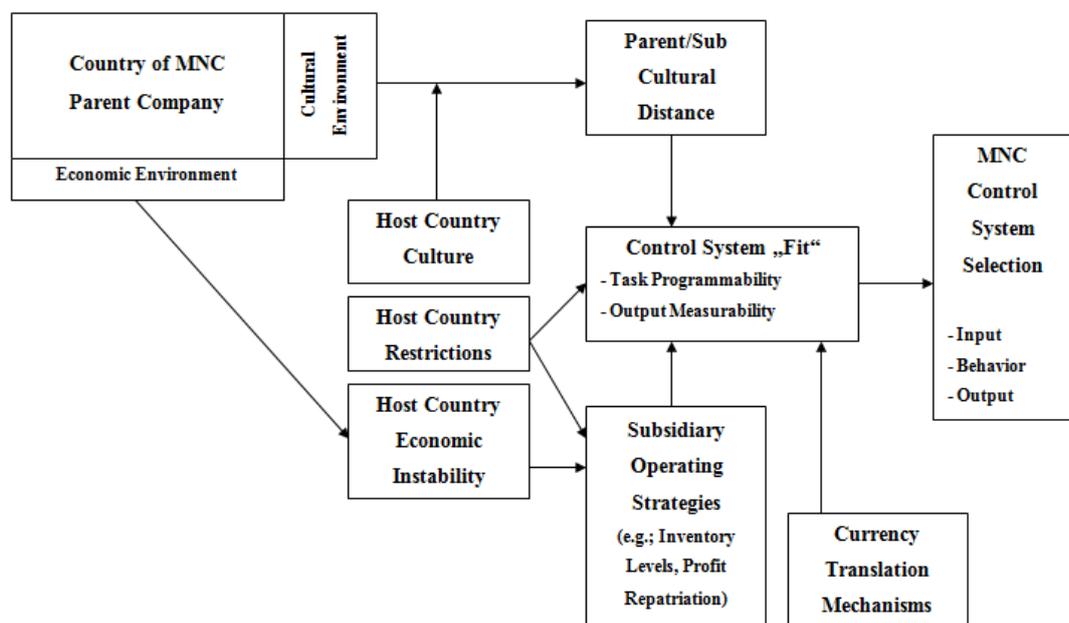


Figure 7 Model of MNC Control Selection (Hamilton Iii & Kashlak, 1999)

Hamilton's model (see Figure 7) shows that the choice of foreign subsidiary control system is affected by economic and non-economic national factors. In addition, it is reasonable to assume that the same choice is influence by home country national factors as well as intra-firm factors. Hamilton (1999) argues that

---

control system “fit” is an important factor in subsidiary performance. Hamilton’s study (1999) suggests that in the context of other host country environmental factors, increasing cultural distance between headquarters and subsidiary results higher use of input controls and a decreasing level of process control mechanisms. Moreover, combined impact of performance ambiguity, cultural distance, financial and political risks influence MNC’s control choices in foreign operations (Hamilton Iii & Kashlak, 1999).

Solberg (2008) in a study of 173 Norwegian exporting firms found supporting evidence that cultural distance and product complexity influence the type and quality of exporter-distributor relationships. Four types of exporter – distributor relationships are identified: limited, functional, cultural and complex, corresponding to different balances between product complexity and cultural distance (Solberg, 2008). Solberg (2008) argues that subsidiary performance in cross-cultural environment is affected by cultural distance and product complexity ; cultural distance relationship problems and product complexity leads to uncertainty and is directly linked with task complexity in foreign operations. Psychic distance is used in this study as a substitute for cultural distance, it is argued that psychic distance views cultural distance at an individual level and, thus, better reveals the distance that exists in the relationship compared to cultural distance at a national level. Solberg (2008) notes that cultural distance and product complexity warrants close control and results in higher satisfaction with exchange performance. Results show that social controls are important part of the exporter – distributor relationship but are negatively linked with cultural distance and positively with product complexity, whereas, results and process controls are used to compliment and clarify social control mechanism depending on product complexity and cultural distance (Solberg, 2008).

Moreover, Newman & Nollen (1996) in their research assume that “*multinational enterprises need to adapt their management practices to the national cultures in which they operate in order to achieve high business performance*” (Newman & Nollen, 1996). After studying 176 work units of a large U.S based company evidence was found that the fit between national culture and management practices has significant impact on performance. “National culture is the central principle of employees’ understanding of work and attitudes about it” (Newman &

---

Nollen, 1996). The fit between managerial practice and national culture greatly impacts the commitment and performance of employees. Moreover, Newman & Nollen (1996) find that despite the congruence of managerial practices and national culture performance of studied work units varies among different cultures.

### 3 RESEARCH MODEL & HYPOTHESES

In this section the relevance of chosen research topic and problem is discussed. Next, a conceptual framework for the research and hypotheses are developed using prior academic research.

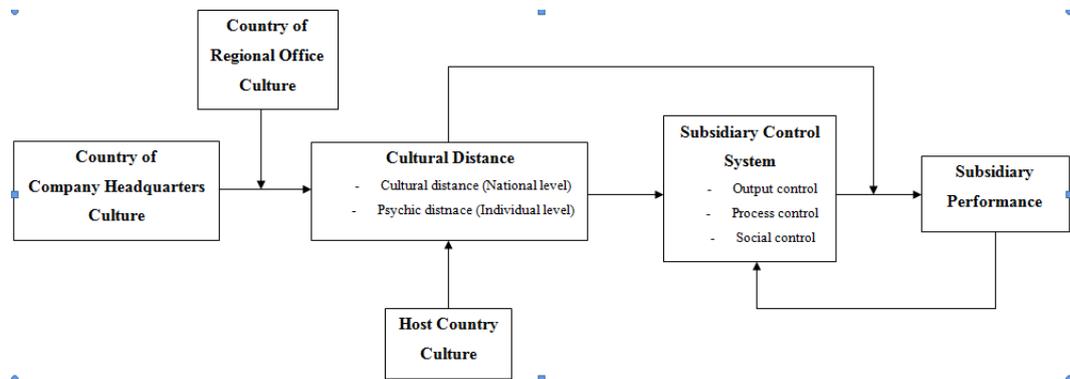
The aim of this research is to provide understanding about the impact or cultural distance on foreign subsidiary control in Lithuania while controlling for non-cultural impacts found in prior studies (market volatility, product complexity). Entering the third decade of independence Lithuania is actively seeking for foreign investments and encouraging international companies to open subsidiaries in the country. Lithuania is relatively new to global business and the post-soviet label has its cons. The research of this thesis aims to provide insights about management practices in foreign subsidiaries in Lithuania and impact of cultural distance for firms looking to enter the country.

Little research has been done studying the management and performance of foreign subsidiaries in Lithuania. Existing research about cultural distance effect on subsidiary control and performance do not agree on the origin of such influences. This study subsidiary control will be studied in a small country context (rather US, Japan or China as most studies), attempt to compare the origins of cultural influences (cultural distance, nationality and psychic distance) found in prior academic research.

**Research problem:** how does cultural distance impact control and performance in subsidiaries in Lithuania

The headquarters choice of foreign subsidiary control systems (or control mechanisms) antecedes from its organizational culture which is highly influenced by national culture values. However, when conducting foreign operations international companies must seek for a compromise combination of management practices that is “fit” for both headquarters and foreign subsidiary (Newman & Nollen, 1996). Thus, cultural distance impact on the choice of control system is present. Some international firms tend to group subsidiaries in smaller countries into regions for managerial simplicity and such subsidiaries may not have direct

regular relations with company's headquarters but communicate through a regional office. Therefore, there is reason to believe that the national culture of headquarters country is diluted by national culture of regional office (if one exists) country and adapted to better fit the need of the region. Conceptual model of this research is presented in Figure 8.



**Figure 8** Conceptual research models

Reviewed academic research confirms the existing link between cultural distance and subsidiary output, process and social control mechanisms (Bello & Gilliland, 1997; Hamilton Iii & Kashlak, 1999; Solberg, 2008; Wilkinson et al., 2008). The findings of these studies have shown that cultural distance is positively related with output control and negatively with process and social controls. The following hypotheses are raised for research:

*H1a: Cultural distance has a positive impact on subsidiary output control.*

*H1b: Cultural distance has a negative impact on subsidiary process control.*

*H1c: Cultural distance has a negative impact on subsidiary social controls.*

Use of Hofstede's cultural dimensions has been criticized to produce mixed results. Psychic distance measures cultural distance on an individual level rather than national and better reflects the problems and differences experienced by foreign subsidiaries (Bello & Gilliland, 1997; Solberg, 2008). Therefore, equivocal to culture distance, hypotheses for psychic distance are raised:

*H2a: Psychic distance has a positive impact on subsidiary output control.*

*H2b: Psychic distance has a negative impact on subsidiary process control.*

*H2c: Psychic distance has a negative impact on subsidiary social controls.*

Harzing (1999) in her research argued that choice of control mechanism is based on the nationality of the company disregarding the host country national culture. The following hypotheses are raised to test the influence of company nationality on foreign subsidiary control:

*H3a: National culture of the company's headquarters/direct accountability country has significant impact on subsidiary output control.*

*H3b: National culture of the company's headquarters/direct accountability country has significant impact on subsidiary process control.*

*H3c: National culture of the company's headquarters/direct accountability country has significant impact on subsidiary social control.*

According to existing academic research (Hamilton Iii & Kashlak, 1999; Newman & Nollen, 1996; Solberg, 2008), international companies adapt their managerial practices to the need of host country to achieve higher performance and effectiveness of foreign operations. Therefore, it is logical to assume that, in addition to the “fit” of control system in a certain setting of cultural distance; subsidiary performance also impacts the control mechanisms used in the subsidiary. Combing the findings of academic research review hypotheses for impact of output, process and social controls on subsidiary performance and the moderating effects of cultural distance and psychic distance are raised:

*H4a: Output control has a positive impact on subsidiary performance*

*H4b: Process control has a negative impact on subsidiary performance*

*H4c: Social control has a positive impact on subsidiary performance*

*H5: Cultural distance between headquarters/direct accountability country and Lithuania moderates the relationship between output, process and social controls, and subsidiary performance.*

*H6: Psychic distance between direct accountability country and Lithuania moderates the relationship between output, process and social controls, and subsidiary performance.*

## **4 METHODOLOGY**

In this section, the aim and objectives of this research are introduced. Second, the chosen research design for this study is presented and discussed. Finally, sampling, data collection and analysis methods are presented and discussed.

### **4.1 RESEARCH AIM & OBJECTIVES**

The aim of research is to study the relationships between cultural distance, subsidiary control system and subsidiary performance in Lithuania. To achieve this aim following objectives for research are established:

1. Measure the extent of use output, process and social control mechanisms in foreign subsidiaries based in Lithuania.
2. Measure cultural and psychic distance between subsidiary in Lithuania and headquarters and/or regional office.
3. Measure performance of subsidiaries in Lithuania
4. Study the impact of cultural distance, psychic distance and national culture on output, process and social controls in subsidiaries.
5. Study the moderating effects of cultural and psychic distance in on the relationship between output, process, social controls and subsidiary performance.

### **4.2 RESEARCH DESIGN**

For the purpose of this thesis a quantitative research design is chosen. Quantitative research design is appropriate when research attempts (1) to test theories, (2) to examine relationships among variables, (3) to use results to generalize its findings (Creswell, 2003). According to Bryman (2012) quantitative research strategy is used for (1) testing of theories when (2) data can be quantitatively measured, (3) causal effect between variables are studied and (4) to be able to generalize results beyond limits of the sample. The aim and purpose of research in the thesis is to measure and test the theoretical links, hypotheses, between cultural distance, subsidiary control system and performance in Lithuania. Results will be used to generalize links, influences and patterns that exist in relationships between chosen variables for foreign subsidiaries in Lithuania. Therefore, a quantitative research design can be appropriately used.

---

Cross-sectional survey method was chosen to implement the quantitative research strategy. According to Creswell (2003) experimental and non-experimental methods might be used in quantitative studies but surveys are rather popular in academic research. Arguments for and advantages of using a survey are the following: they provide quantitative descriptions of research phenomenon of a certain population and results of the small sample can be generalized to describe the behaviors of a large population, and fast pace of data collection (Creswell, 2003)

### **4.3 DATA COLLECTION**

Data collection for quantitative survey research design can be collected by using questionnaires or interviews (Bryman, 2012; Creswell, 2003). For the purposes of this research data is collected from, firstly, questionnaires and, secondly, secondary data is gathered to measure Hofstede's cultural dimensions for countries listed in questionnaires answers.

The questionnaire was placed on the internet to provide better access for respondents, ease for submitting answers and minimize the risk of respondent forgetfulness or mistyping. The questionnaire consists of three main parts: (1) introduction, (2) instructions for answering questions and (3) questions. In the introduction the purpose of the research and survey are explained, the confidentiality of their answers is assured and average time of answering the survey is presented. Instructions for answering the questions are provided as needed for each question. The questionnaire includes 28 questions divided into 8 categories (see Appendix 1: Survey Questions in English).

#### **Output control, Process control and Social control.**

First, second and third parts of the questionnaire are dedicated to measuring the levels of use of output, process and social controls. Types of control mechanisms were specified by review of existing theoretical literature (Merchant & Stede, 2007; Ouchi, 1979) and questions used to measure the different types of control mechanisms exerted over foreign subsidiaries in Lithuania were adapted from prior academic research (Hamilton Iii & Kashlak, 1999; Harzing, 1999; Solberg, 2008). A five point scale (from 1 "very low"... to 5 "very high") was used in each question to measure the degree of use of specific control mechanisms.

**Psychic distance.**

Fourth part of the questionnaire measures psychic distance between Lithuania and country to which subsidiary is directly accountable (reporting) to. Three questions measuring psychic distance were adapted from Bello (2003) and Solberg (2003) studies. The items address the problems subsidiary faces due to differences of socio-cultural context between the countries and is measure by a 5 point scale (from 1 “totally disagree”... to 5 “totally agree”).

**Product complexity.**

Fifth part of the survey measures the complexity of products/services that subsidiary in Lithuania is responsible for. Three questions measuring product complexity were adapted from Bello (2003) and Solberg (2003). A five point scale (from 1 “very low”... to 5 “very high”) was used in each question.

**Market volatility and Subsidiary performance.**

Sixth and seventh parts of the questionnaire measure the market volatility experienced by the subsidiary in Lithuania and its performance. Subsidiary performance was measured by the degree of goal achievement rather than in financial terms because of lack of willingness to disclose financial information and the difficulty to compare financial performance between subsidiaries operating in different industries. Thus, three question for each (subsidiary performance and market volatility) were adapted from research by Bello (Bello et al., 2003; Bello & Gilliland, 1997). A five point scale (from 1 “very low”... to 5 “very high”) was used for market volatility and a five point scale (from 1 “never achieve”... to 5 “always achieve”) for subsidiary performance.

**Company information.**

Last section of the survey includes question constructed to gather information about the subsidiary in Lithuania (name, size, age, headquarters country, regional office country (if there is one)). Data of the name, headquarters and regional office country is further used to collect data about national cultures of these countries.

---

Survey questions were initially constructed in English and then translated into Lithuanian. 3 companies were asked to participate in a pilot survey and asked to comment on the question structure so that adjustments for better translation wording and understanding of the essence of questions could be established. The final questionnaire, as mentioned above, was placed on the internet to gather data and survey was publicized through personal contacts and e-mail. The survey gathered answers from 46 companies – 43 questionnaires were properly filled and useable.

The next step of data collection is to use the list of countries (headquarters and regional office countries) to gather the scores of Hofstede's cultural dimensions for each country. The scores for each country are collected from the database in Geert Hofstede's internet website ([www.geert-hofstede.com](http://www.geert-hofstede.com)) (Geert Hofstede, 2012). Additionally, scores for Lithuania and Latvia are not available from the mentioned website, therefore, they are gathered from research done by Maik Huettinger (Huettinger, 2008)

#### **4.4 POPULATION & SAMPLE**

In this thesis research the population is the wholly-owned foreign subsidiaries in Lithuania which share the name of their parent company. According to the data gathered from an e-mail inquiry to the Government Institution "Center of Registers" of Lithuania, currently, there are 2572 companies that are partially or fully owned by a foreign legal entity, 759 of these companies are wholly-owned by a single foreign legal entity and 426 of them are registered as branches (limited legal entity in Lithuania). However, the data for accurate population size was too expensive to obtain from GI "Center of Register"; a phone conversation with a manager of the institution provided the estimate of 400-450 wholly owned subsidiaries that share parent company name.

A convenience sampling technique was firstly used and companies were contacted to participate in the survey using personal contacts and contacts of family and friends. In addition, 382 e-mail addresses of 311 companies were purchased from information center JSC "Lintel". A total of 374 companies were contacted to participate in the survey. 43 usable questionnaires were received.

---

#### 4.5 DATA ANALYSIS

First of all, collected data is prepared for further analysis. Items with reversed scales are transformed to be compatible with other items. Scale reliability will be tested to identify the items that do not achieve desired reliability and should be removed from further study. Items that meet the requirements of scale reliability are will be combined by a summated mean function into variables. Variables will be formed from corresponding items and factor analysis will not be conducted because the items are adapted from prior research and are assumed to form selected variables. Normality and validity of the variables will be assessed by using normality tests and correlation analysis. In addition, Hofstede's country scores for cultural dimensions are used to calculate cultural distances between headquarters/regional office country and Lithuania (including single dimension distances) using the Kogut and Singh (1988) index of cultural distance.

Secondly, frequency tables and descriptive statistics such as means, standard deviations are used to examine the cultural context of the sample subsidiaries and their internal and external characteristics – output, process and social control, performance, market volatility, psychic distance, product complexity, age, size.

Thirdly, multiple regression analysis will be used to test the hypotheses about the relationships between cultural distance, subsidiary control system and performance. According to Hair (2010), multiple regression is used to a study relations between dependent variable and several independent variables, asses the strength and direction of independent variable impact on the relationship. Moreover, multiple regression analysis is used to test the moderating effect of cultural and psychic distance in the relationship between output, process, social controls and subsidiary performance. Regression analysis is used to evaluate the effect of a third (moderating) variable on the relationship between a pair of related variables (Hair, 2010). The regression analysis is executed and relationships are considered statistically significant at a level of 0.95 confidence ( $p < 0.05$ ).

Finally, the results of regression analysis and moderation analysis are summarized and hypotheses testing results are presented.

## 5 EMPIRICAL RESULTS

In this section of the thesis, analysis of data is performed and empirical results of research and hypotheses testing are presented. In some cases this section will use abbreviated variable names, for a list of variable abbreviation see 9.2 Appendix 2: List of Variable Abbreviations.

### 5.1 SUBSIDIARY DESCRIPTIVE STATISTICS

Subsidiaries represented in the sample are characterized using frequency tables and descriptive statistics. As mentioned before (in section 4.4 Population & Sample), the research sample represents 43 subsidiaries in Lithuania that are wholly-owned owned by international companies. Table 3 shows the distribution of international companies' countries of origin (countries where company headquarters are located) represented in the sample, scores for five Hofstede's cultural dimensions (Power Distance – PDI; Individualism – IDV; Masculinity – MAS; Uncertainty Avoidance – UAI; Long-term Orientation – LTO) and index of cultural distance (CD) (Kogut & Singh, 1988) for each country are presented.

Country of Origin	Frequency	%	PDI	IDV	MAS	UAI	LTO	CD
Austria	1	2%	11	55	79	70	31	2.908
Belgium	1	2%	65	75	54	94	38	2.409
Denmark	1	2%	18	74	16	23	46	3.053
Estonia	1	2%	40	60	30	60	27	0.077
Finland	5	12%	33	63	26	59	41	0.434
Germany	10	23%	35	67	66	65	31	0.833
Japan	1	2%	54	46	95	92	80	7.560
Latvia	2	5%	44	70	9	63	25	0.263
Netherlands	1	2%	38	80	14	53	44	1.208
Norway	1	2%	31	69	8	50	44	0.923
Poland	2	5%	68	60	64	93	32	2.371
Sweden	4	9%	31	71	5	29	20	1.531
Switzerland	5	12%	34	68	70	58	40	1.224
UK	4	9%	35	89	66	35	25	2.859
USA	4	9%	40	91	62	46	29	2.483
Total	43	100%						

Table 3 Countries of origin, cultural dimensions and cultural distance

Table shows that 43 subsidiaries in the sample have their headquarters located in 15 different countries in Europe, North America and Asia. Data shows an evident

cluster of 10 (23%) German companies in the sample and smaller groups of 4-5 (9-12%) companies originating from Finland, Sweden, Switzerland, UK, USA. In addition, data about regional offices was collected to identify if the subsidiary is directly controlled by a regional office or directly by company's headquarters. Table 4 shows that 17 (40%) subsidiaries in the sample report to regional offices located in 6 different countries and not directly to the company's headquarters.

<b>Regional office country</b>	<b>Frequency</b>	<b>%</b>
Austria	1	6%
Estonia	4	24%
Finland	5	29%
Ireland	1	6%
Latvia	3	18%
Poland	3	18%
<b>Total</b>	<b>17</b>	<b>100%</b>

**Table 4 Regional Office countries**

Therefore, a list of countries to which subsidiaries are directly accountable to was created (see Table 5). Table 5 shows that the 43 subsidiaries are directly accountable to company's headquarters or regional offices located in 13 different countries. Distribution of countries in Table 5 is more even than in Table 3. However, data shows a cluster of 10 (23%) accountable to Finland.

<b>Countries</b>	<b>Frequency</b>	<b>%</b>	<b>PDI</b>	<b>IDV</b>	<b>MAS</b>	<b>UAI</b>	<b>LTO</b>	<b>CD</b>
Austria	2	5%	11	55	79	70	31	2.425
Belgium	1	2%	65	75	54	94	38	2.633
Estonia	5	12%	40	60	30	60	27	0.105
Finland	10	23%	33	63	26	59	41	0.686
Germany	6	14%	35	67	66	65	31	0.956
Ireland	1	2%	28	70	68	35	43	2.790
Latvia	5	12%	44	70	9	63	25	0.440
Netherlands	1	2%	38	80	14	53	44	2.150
Poland	5	12%	68	60	64	93	32	2.116
Sweden	2	5%	31	71	5	29	20	2.036
Switzerland	2	5%	34	68	70	58	40	1.617
UK	1	2%	35	89	66	35	25	4.090
USA	2	5%	40	91	62	46	29	3.725
<b>Total</b>	<b>43</b>	<b>100%</b>						

**Table 5 Countries of direct accountability, cultural dimensions and cultural distance**

In addition, comparison of data presented in Table 3 and Table 5 shows that 14 of 17 (82%) regional offices in the sample are located in countries that are culturally closer to Lithuania than company's countries of origin. Such tendency might suggest that cultural distance affect management of subsidiaries in Lithuania.

Further, Descriptive statistics (see Table 6) are used to define the subsidiaries in Lithuania. Subsidiaries in the sample are widely dispersed in terms of age (st. dev. 5.87) and size (st. dev. 118.16); it is shown by the high standard deviation of the variables. Means, displayed in Table 6, show that there is a high degree of output control (mean 3.72), process controls are used to an above medium degree (mean 3.19) and social controls are used the least (mean 2.77). Data also shows that subsidiaries operate in moderately volatile markets (mean 3.00) with rather highly complex products (mean 3.61). Table 6 shows an overall high performance of subsidiaries (mean 3.81) in the sample.

Variable	Range	Minimum	Maximum	Mean	Std. Deviation
Size	499	1	500	62.279	118.162
Age	22	1	23	12.535	5.873
Output control (OC)	3.33	1.67	5.00	3.721	0.891
Process control (PC)	4.00	1.00	5.00	3.186	1.072
Social control (SC)	3.00	1.25	4.25	2.773	0.740
Subsidiary performance (SP)	3.00	2.00	5.00	3.814	0.687
Product Complexity (Pco)	3.67	1.33	5.00	3.605	0.865
Market volatility (MV)	3.67	1.33	5.00	3.000	0.888
Psychic distance (PD)	4.00	1.00	5.00	2.248	0.894
Cultural distance between country of origin and Lithuania (CDH)	7.483	.077	7.560	1.570	1.296
Cultural distance between country of direct accountability and Lithuania (CDD)	3.985	.105	4.090	1.329	1.054

**Table 6 Subsidiary descriptive statistics**

Difference between the means of psychic distance (2.25) cultural distances between Lithuania and country of origin (1.57) and country of direct accountability (1.33) suggests that cultural distance is higher at the individual level rather than at national level. Hofstede's and Kogut & Singh scales are aggregate measures of cultural dimensions at a national level; strategies are implemented by managers who understand the cultural distance at an individual

level, thus, psychic distance may provide better understanding of managerial decisions (Solberg, 2008).

## 5.2 SCALE RELIABILITY

Cronbach's alphas are measured to test the scales of reliability of the variables in the survey. Table 7 shows that 5 variables measure Cronbach's alphas above the desired level, other 2 measure above the minimum level.

	<b>Variables</b>		<b>Alpha</b>
1	<i>Output control</i> Degree of result controls Degree of planning/budgeting Regularity of result controls		0.706
2	<i>Process control</i> Degree of Standardization Degree of Formalization Regularity of Monitoring	Deleted	0.854
3	<i>Social control</i> Degree of organizational culture and value sharing Degree of informal communication Participation in mixed (inter-subsidiary, subsidiary-headquarters) committees, task forces, project groups Degree of executive headquarters training/work experience		0.656
4	<i>Psychic distance</i> Degree of cultural differences Degree of problems associated with existing cultural differences Degree of problems associated with language	Deleted	0.860
5	<i>Product complexity</i> Degree of complexity Degree of Technologic Innovation Need for maintenance/support		0.661
6	<i>Market Volatility</i> Degree of Stability Degree of Uncertainty Speed of Changes in the market		0.780
7	<i>Subsidiary performance</i> Profit goals achievement Growth goals achievement Sales goals achievement		0.724

Table 7 Scale reliability of variables

Scales are considered reliable when measured Cronbach's alphas exceed the desired level of 0.70 or are at least above 0.60 (Bryman, 2012). Scale reliability using Cronbach's alpha measures is sensitive to sample size and the number of items used to measure each construct (Bryman, 2012). Cronbach's alpha for product complexity was measured to be 0.830 in study by Solberg (2008) from which the construct of product complexity was adapted in this research. Due to a rather small sample size, 42 subsidiaries, of this research, fact that only 3 items were used to measure each construct and use of items in prior research (Harzing (1999), Solberg (2008)) the 2 items below the desired alpha level of 0.70 are considered reliable and used in further research. 2 items, regularity of monitoring (Process control) and degree of problems associated with language (Psychic distance), were removed from further research. According to Hair (2010), items should be removed when item correlation is less than or close to 0.3: 0.314 for regularity of monitoring (Process control), 0.333 for degree of problems associated with language (Psychic distance). Deletion of mentioned items increased scale reliability of process control and psychic distance variables, from 0.706 to 0.854 and from 0.723 to 0.860 respectively. The total scale reliability is 0.706 which is above the desired level of 0.70 and meets the minimum requirements to be considered reliable.

### **5.3 NORMALITY TESTS**

Normality tests are used to identify the distribution of variables and evaluate central tendency (Bryman, 2012). Shapiro-Wilks and Kolmogorov-Smirnov test are commonly used to test the assumptions of normal distribution. For a distribution to be considered normal p-value (sig.) should remain not higher than 0.05 (Hair, 2010). Normality tests results (see 9.3 Appendix 3: Normality tests) show that almost all variables have normal distributions. Product complexity, Market Volatility and Age distributions show signs of non-normality but have significance in one of the two tests but the second test p-values (sig.) are very close to 0.05 and will be considered as normal distributions further in this thesis. Psychic distance is considered a non-normal distribution by both tests. According to (Hair, 2010) treatment of non-normality can be done by transforming variables. Therefore, Psychic distance is transformed by using Log10 function. After

---

transformation distribution of psychic distance variable is normal because p-values (sig.) of both tests are below 0.05 (see 9.3 Appendix 3: Normality tests)

#### **5.4 CORRELATION ANALYSIS**

Correlations analysis is used to identify and evaluate the strength and direction of relationships that exist between the variables and check their validity (signs of multicollinearity) for further research. Pearson's correlations can be used because the all variables are appropriately centered and are normally distributed (Bryman, 2012). The relationships are evaluated according to Cohen's criteria: 0.1 means small, 0.3 moderate, 0.5 large and 0.8 extremely large correlations (Salkind, 2010). Direction of relationship is displayed by the sign of the correlation coefficient: positive or negative. (Bryman, 2012). Therefore, a correlation coefficient of 0.9 shows a large positive relationship between the variables and -0.9 shows a large negative relationship and 0 shows that there is no relationship between the variables. Correlation matrix presented in Appendix 4: Correlation matrix shows the existing relationship between the measured variable. For data to be considered valid, there should not be any statistically significant (sig. p-value < 0.05) large inter-correlations (>0.5) between the variables (Hair, 2010).

As the data of correlation coefficients in Appendix 4: Correlation matrix shows there are no statistically significant relationships between the variables that have a higher correlations coefficient than 0.7 (Hair, 2010). Only exception is the relationship between independent variables of output and process controls. Theory suggests that different types of control mechanisms can be used to substitute one another (Merchant & Stede, 2007). In addition, findings of academic research show that different types of control mechanisms can be used as complementary to one another (Hamilton (1999), Harzing (1999), Solberg (2008)). Therefore, such inter-correlations might exist and is not considered harmful to the results of further research. The correlation coefficient matrix does not show any signs of multicollinearity that should be considered.

#### **5.5 MULTIPLE REGRESSION ANALYSIS**

Multiple regression analysis method is used to test the hypotheses and explore the relationships between dependent and independent variables. A total of 4 multiple regressions (one for each dependent variable: output, process and social controls)

are run to analyze such relationships. The impact of each independent variable on dependent variable is then discussed. Summary results of multiple regression analysis and variance analysis for dependent variables are presented in Table 8 and Table 9

Dependent variables	Independent variables	Coefficient	Beta	R2	F	Sig.
Output Control (OC)	Model			0.480	8.782	0.000
	Constant	1.583				0.019
	PDLog	1.591	0.361			0.005
	IDVD	-0.028	-0.257			0.036
	Pco	0.286	0.277			0.026
	SP	0.620	0.479			0.000
Process control (PC)	Model			0.193	4.772	0.140
	Constant	2.567				0.002
	MASDDist	-0.214	-0.335			0.023
Social Control (SC)	Model			0.267	7.275	0.002
	Constant	2.291				0.000
	PDLog	-1.376	-0.376			0.009
	PCo	0.273	0.32			0.024
Subsidiary performance (SP)	Model			0.230	12.224	0.001
	Constant	2.438				0.000
	OC	0.370	0.479			0.001

Table 8 Regression analysis summary

### Output Control as a dependent variable.

The first regression analysis uses Output Control as dependent variable and is done to test the following hypotheses:

*H1a: Cultural distance between headquarters/direct accountability country and Lithuania has a positive impact on subsidiary output control.*

*H2a: Psychic between direct accountability country and Lithuania distance has a positive impact on subsidiary output control.*

*H3a: National culture of the company's headquarters/direct accountability country has significant impact on subsidiary output control.*

The relationship between output control and variables of cultural distance (including individual cultural dimensions), national culture dimensions and psychic distance, and control variables (product complexity, market volatility,

subsidiary performance, age and size) are tested. Firstly, all the variables are entered in the regression model and then variables that do not meet the required criteria of multicollinearity and/or significance level are removed one at a time. Significance level of  $p < 0.05$  is chosen for this analysis and the criteria for multicollinearity are chosen according to Hair (2010) who includes a low degree of multicollinearity - tolerance value should not be less than 0.25 and VIF value should not exceed 4. List of variables excluded from regression model are presented in Appendix 5: Multiple Regression Analysis. Collinearity statistics shows that variables were removed due to significance values that did not meet the required significance degree of  $p < 0.05$ , despite the fact they met the tolerance and VIF requirements. After all insignificant variables were removed; the further regression analysis was executed. The final model shows that psychic distance, individualism of direct accountability country, product complexity and subsidiary performance have significant impact on use of output control in Lithuanian subsidiaries and that together these variables explain 48% ( $R^2 = 0.480$ ) of total variance of output control. Analysis of variance (see Table 9) shows that the model is fit because the significance value (0.000) is  $p < 0.05$ .

Dependent variable		Sum of Squares	df	Mean Square	F	Sig.
Output Control (OC)	Regression	16.005	4	4.001	8.782	0.000
	Residual	17.313	38	0.456		
	Total	33.318	42			
Process Control (PC)	Regression	12.908	2	6.454	4.772	0.014
	Residual	54.103	40	1.353		
	Total	67.012	42			
Social Control (SC)	Regression	6.129	2	3.064	7.275	0.002
	Residual	16.848	40	0.421		
	Total	22.977	42			
Subsidiary Performance (SP)	Regression	4.558	1	4.558	12.224	0.001
	Residual	15.287	41	0.373		
	Total	19.845	42			

**Table 9 Analysis of variance for dependent variables**

From the 4 variables included in the model subsidiary performance is the most important variable predicting output control (has highest  $\beta$  value  $\beta = 0.479$ ) and has a positive relationship with output control. Psychic distance ( $\beta = 0.361$ ) and Product complexity ( $\beta = 0.277$ ) both have positive relationships with the dependent

---

variable. Individualism of direct accountability country ( $\beta=-0.257$ ) is the least important variable in predicting output control and has a negative relationships with it. All independent variables No other variables were found to be significantly (at a level of  $p<0.05$ ) related to output controls. Therefore, hypothesis H1a is not supported because none of the variables of cultural distance were found to be significantly related; hypothesis H2a is supported and hypothesis H3a is considered only partially supported because only 1 of 5 cultural dimensions is related to the dependent variable.

### **Process Control as a dependent variable.**

The second regression model uses Process Control as dependent variable and is done to test the following hypotheses:

*H1b: Cultural distance has a negative impact on subsidiary process control.*

*H2b: Psychic distance has a negative impact on subsidiary process control.*

*H3b: National culture of the company's headquarters/direct accountability country has significant impact on subsidiary process control.*

The relationship between process control and variables of cultural distance (including individual cultural dimensions), national culture dimensions and psychic distance, and control variables (product complexity, market volatility, subsidiary performance, age and size) are tested. The model for process control is made the same way as for output control: by entering all variables and then removing the insignificant variables or variables that show signs of multicollinearity (list of excluded variables in Appendix 5: Multiple Regression Analysis). The final model shows that masculinity dimension distance between country of direct accountability and Lithuania and Product Complexity are statistically significant (at a level of  $p<0.05$ ) predictors of process control. The composed model predicts 19% ( $R^2=0.193$ ) of the total variance of process control and is fit ( $p<0.05$ , Table 9). The coefficient  $\beta$  values in Table 8 show that the most important predictor is masculinity distance ( $\beta=-0.335$ ,  $p<0.05$ ) and has a negative impact on process control. Product Complexity ( $\beta=0.289$ ,  $p<0.05$ ) has a positive relationship with process control but is less important than masculinity distance in predicting use of process control mechanisms. No other variables were found to be significant (at a level of  $p<0.05$ ). To sum up, hypothesis H1b is partially

---

supported because only distance of masculinity dimension was found to be negatively related to process control. Psychic distance and National Culture were not found to be significantly related with process control, thus, hypothesis H2b and H3b are not supported.

### **Social control as a dependent variable.**

The third regression model uses Social Control as dependent variable and is done to test the following hypotheses:

*H1c: Cultural distance has a negative impact on subsidiary social controls.*

*H2c: Psychic distance has a negative impact on subsidiary social controls.*

*H3c: National culture of the company's headquarters/direct accountability country has significant impact on subsidiary social control.*

The relationship between social control and variables of cultural distance (including individual cultural dimensions), national culture dimensions and psychic distance, and control variables (product complexity, market volatility, subsidiary performance, age and size) are tested. The model for social control is executed in the same backward variable removal manner as first and second models: by entering all variables and then removing the insignificant variables or variables that show signs of multicollinearity (list of excluded variables in Appendix 5: Multiple Regression Analysis). Results (see Table 8) show that the model has a rather moderate prediction power 26.7% ( $R^2=0.267$ ,  $p<0.05$ ) of total social control variance. Most important predictor variable is Psychic distance ( $\beta=-0.376$ ,  $p<0.05$ ) which is negatively related to use of social control in subsidiaries. Also Product Complexity ( $\beta=0.320$ ) was found to be significantly and positively related to social controls. Both independent variables meet the requirement of multicollinearity and are statistically significant. No other variables were found to be significant (at a level of  $p<0.05$ ) and included in the model. Therefore, the model does not show any links between cultural distance or dimensions of national culture and hypotheses H1c and H3c are not supported. Whereas, psychic distance has a negative impact on social controls, thus, providing support for hypothesis H2c.

### **Subsidiary Performance as dependent variable.**

---

The fourth and last, in this section, regression analysis uses Subsidiary Performance as dependent variable and is done to test the following hypotheses. Also the results of this regression model are used as a base for regression model in moderation analysis.

*H4a: Output control has a positive impact on subsidiary performance*

*H4b: Process control has a negative impact on subsidiary performance*

*H4c: Social control has a positive impact on subsidiary performance*

The impact of output, process and social controls on subsidiary performance is explored in this model. All variable for control are entered in the model and their collinearity statistics of tolerance and VIF are within desired limits. However, variables for process and social controls are removed from the model because they do not meet the criteria for significance  $p < 0.05$  (list of excluded variables in Appendix 5: Multiple Regression Analysis). Table 8 shows that the model is composed of only one independent variable, output control ( $\beta = 0.479$ ) which is positively related to subsidiary performance and has a rather large impact on it. According to Table 8 and Table 9 the model is overall significant ( $p < 0.05$ ) and it explains 23% ( $R^2 = 0.230$ ) of total subsidiary performance variance. Therefore, hypothesis H4a is supported. Hypotheses H4b and H4c are not supported because no significant (at the desired level of  $p < 0.05$ ) relationships were found between subsidiary performance and process or social controls.

## **5.6 MODERATION ANALYSIS**

Moderation analysis is chosen to examine the impact of cultural and psychic distance on the relationships that exist between subsidiary controls and performance, and test the following hypotheses:

*H5: Cultural distance between headquarters/direct accountability country and Lithuania moderates the relationship between output, process and social controls, and subsidiary performance.*

*H6: Psychic distance between direct accountability country and Lithuania moderates the relationship between output, process and social controls, and subsidiary performance.*

A moderator is a third variable that affect the relationship between dependent and independent variables (Hair, 2010). All variables do not have to be significantly related prior to moderation analysis. According to Hair (2010), moderation analysis is done in three steps: (1) estimate the unmoderated (original) regression, (2) estimate the original plus moderating variable regression and (3) assess the change of  $R^2$  between regression models in steps (1) and (2). Results of moderation analysis are presented in Table 10.

<b>Subsidiary performance and Control</b>	<b>R<sup>2</sup></b>	<b>R<sup>2</sup> Change</b>	<b>F Change</b>	<b>Sig. F Change</b>
Without moderating variables	0.250	0.250	4.325	0.010
Cultural distance (HQ) moderating effect	0.340	0.910	1.665	0.192
Cultural distance (direct acc.) moderating effect	0.308	0.058	1.000	0.404
Psychic distance moderating effect	0.282	0.032	0.532	0.663

Table 10 Summary of moderation analysis results

Assumptions of moderation analysis say that all variables used should be centered and standardized before regressions are executed to avoid excessive levels of multicollinearity (Hair, 2010). Centering and standardizing means that variables should be transformed to have means equal to 0 and standard deviations equal to 1. Transformed variable descriptive statistics are presented in Appendix 6: Moderation Analysis and show that the variables are properly centered and standardized. Next, moderators (cultural distances between headquarters/direct accountability country and psychic distance) are added to the analysis by multiplying them with each of dependent variables for each moderation regression. 4 separate regression (1 without moderation, 3 with moderation) models are executed to explore the mentioned moderating effects.

Results of 4 regression models (presented in Table 10) show that without any moderating effects output, process and social controls explain 25% ( $R^2=0.250$ ) of total subsidiary performance variance at significance level of  $p<0.05$ . For a moderating effect of a variable to be considered significant, first,  $R^2$  must change

---

after inclusion of moderating variables into the model, second, the change of  $R^2$  must be significant at the level of  $p < 0.05$  (Hair, 2010). It is evident, from Table 10, that after inclusion of cultural distance between headquarters country and Lithuania as a moderating variable  $R^2$  increased by 0.91. However, this change is not significant ( $0.192 > 0.05$ ) and, therefore, cultural distance (between HQ country and Lithuania) is not a significant moderator in the relationship between subsidiary performance and output, process and social controls. Likewise, moderating effects of cultural distance between country of direct accountability and Lithuania and psychic distance are found to be statistically insignificant ( $R^2$  change = 0.058,  $0.404 > 0.05$  and  $R^2$  change = 0.032,  $0.663 > 0.05$ ) at the significance level of  $p < 0.05$ . Conclusion, both hypotheses H5 and H6 are not supported because the moderation analysis did not show any moderating effects of Cultural distance between headquarters/direct accountability country and Lithuania and Psychic distance in the relationship between subsidiary performance and output, process, social controls.

## 5.7 HYPOTHESES TESTING RESULTS

Table 11 presents the hypotheses testing results achieved by multiple regression and moderation analysis executed in the previous section.

	<b>Hypothesis</b>	<b>Result</b>
H1a:	<i>Cultural distance has a positive impact on subsidiary output control.</i>	<i>No support</i>
H1b:	<i>Cultural distance has a negative impact on subsidiary process control.</i>	<i>Partial support</i>
H1c:	<i>Cultural distance has a negative impact on subsidiary social controls.</i>	<i>No support</i>
H2a:	<i>Psychic distance has a positive impact on subsidiary output control.</i>	<i>Support</i>
H2b:	<i>Psychic distance has a negative impact on subsidiary process control.</i>	<i>No support</i>
H2c:	<i>Psychic distance has a negative impact on subsidiary social controls.</i>	<i>Support</i>
H3a:	<i>National culture of the company's headquarters/direct accountability country has significant impact on subsidiary output control.</i>	<i>Partial support</i>
H3b:	<i>National culture of the company's headquarters/direct accountability country has significant impact on subsidiary process control.</i>	<i>No support</i>
H3c:	<i>National culture of the company's headquarters/direct accountability country has significant impact on subsidiary social control.</i>	<i>No support</i>
H4a:	<i>Output control has a positive impact on subsidiary performance</i>	<i>Support</i>
H4b:	<i>Process control has a negative impact on subsidiary performance</i>	<i>No support</i>
H4c:	<i>Social control has a positive impact on subsidiary performance</i>	<i>No support</i>
H5:	<i>Cultural distance between headquarters/direct accountability country and Lithuania moderates the relationship between output, process and social controls, and subsidiary performance.</i>	<i>No support</i>
H6:	<i>Psychic distance between direct accountability country and Lithuania moderates the relationship between output, process and social controls, and subsidiary performance.</i>	<i>No support</i>

**Table 11 Summary of hypotheses testing results**

## **6 DISCUSSION**

In this section, findings of previous academic studies are discussed side-by-side with the results of this thesis research. Next, implications for managerial practices are presented. Finally, limitations of this research and recommendations for further research are examined.

### **6.1 SYNTHESIS OF EMPIRICAL RESEARCH FINDINGS AND LITERATURE REVIEW**

The aim of research was to study the relationship use of different types of control mechanisms (output, process and social) and the cultural context (cultural distance between headquarters country and Lithuania, cultural distance between country of direct accountability and Lithuania, company's nationality and psychic distance) of foreign subsidiaries in Lithuania and relationship between subsidiary performance and control mechanisms (output, process and social) used to govern foreign subsidiaries in Lithuania. Proposed conceptual framework predicted that cultural context has a significant impact on the choice of control systems of foreign subsidiaries which in turn affect subsidiary's performance and also that cultural and psychic distance directly influence the relationship between control mechanisms and performance. Research results support of partially support 5 of 14 hypotheses.

First, Results of this research show that levels of process controls exerted over foreign subsidiaries in Lithuania are negatively affected by the distance of masculinity dimension between Lithuania and country by which subsidiary is directly controlled by. This supports Hamilton's (1999) research which finds that greater cultural distance increases the probability of process controls to be used as primary source of control in foreign subsidiaries. Empirical results also show that psychic distance has positive impact on use of output controls and negative influence on social control mechanisms exerted over subsidiaries in Lithuania. Findings of Solberg's (2008) study state that social (clan) controls are important in all setting of psychic distance, this corroborates with the results of this research because survey measured moderate mean levels of social control mechanisms used in studied foreign subsidiaries in Lithuania but research also shows that, despite the importance, there is a negative relationship between psychic distance

---

and social control mechanisms. However, results of this research directly conflict the negative effect of psychic distance on output controls found by Bello (1997) but Solberg (2008) notes that this effect is diminished when other types of controls are used and that psychic distance requires principal's close control. In addition, survey data show that output controls are negatively affected by the individualism of country to which subsidiary is directly controlled by and supports the idea of national culture's influence on foreign subsidiary control. Such finding is in congruence, to some extent, with Harzing's (1999) results which show that use of different control mechanisms depends on company's nationality.

Second, regression analysis showed that product complexity positively influences all types of control mechanisms (output, process and social). Such results are in accordance to Solberg (2008) who states "product complexity warrants close monitoring by the principal, regardless of problems accessing reliable information about the outcome of agents activity". It also corroborate with Bello (1997) research which finds positive links between product complexity and output and process controls.

Third, this research studies the link between subsidiary performance and control mechanisms used to govern foreign subsidiaries in Lithuania. Results show that only output control mechanisms have significant impact on subsidiary control and vice versa but results do not show a significant link between performance and process or social controls. Bello (1997) research support these results and finds that performance is positively linked output controls and process controls have negative impact, it is seconded by Solberg (2008).

Finally, results of this research do not show direct impact cultural or psychic distance on relationship between control system and subsidiary performance as predicted by Newman and Nollen (1996) which study the relationship between performance and congruence of national culture and managerial practices. However, the proposed conceptual model and empirical results show that subsidiary performance in Lithuania is indirectly influenced culture through the use of output control mechanisms. This suggests that companies trying to maximize the performance of subsidiaries in Lithuania might adjust the control for a better fit according to cultural differences.

## **6.2 IMPLICATIONS FOR MANAGERIAL PRACTICE**

This study shows that foreign subsidiary control choices in Lithuania are influenced by the cultural context of subsidiary and also that the chosen control system in turn impacts subsidiary performance.

Managers in international companies can use these results to study the foreign subsidiary control systems used in their company. Nowadays in Lithuania and the Baltic region, large international companies tend to group individual country subsidiaries into regions. The results of this research can provide assistance to managers when designing control systems for such regional subsidiaries. Managers should consider the cultural differences between countries assigned for one region and assess the fit of chosen control system for all countries, whether it will be effective in all subjected countries. Also survey data shows that some companies use regional offices to manage subsidiaries in smaller countries such as Lithuania. Therefore, managers should be aware of possible problems that may occur due to cultural differences when considering placement of regional offices.

Moreover, managers looking at increasing the performance of foreign subsidiaries in Lithuania should consider increasing the extent of output controls. Results show that higher output controls, regular monitoring, clear cut goals, detailed planning and budgeting, can increase the performance of subsidiaries in Lithuania. Therefore, managers should primarily consider on use of output controls rather than process or social when designing effective control systems of foreign subsidiaries in Lithuania.

## **6.3 LIMITATIONS AND IMPLICATION FOR FURTHER RESEARCH**

The research has some inherent limitations due to sampling. The sample includes only wholly-owned subsidiaries and research does not study partially owned subsidiaries. This impedes the ability to generalize findings for foreign subsidiaries operating in Lithuania. Also the convenience sampling technique may have hindered the representativeness of the sample because large portion of the studied companies are from the pharmaceutical industry.

---

Three recommendations for further research are raised from this study. First, future research should consider studying cultural impact on foreign subsidiary control in other culturally close countries such as Latvia and Estonia to validate the results of this research. Also such further research can investigate the regional subsidiaries and the antecedents of their formation. Second, results of this research suggest that the existence of a regional office which controls foreign subsidiaries plays an important role in foreign subsidiary management. This role may be the focus of further research. Third, a more in-depth analysis of cultural influences on foreign subsidiary control may include the “fit” of control system to particular cultural setting as a moderating factor between subsidiary control and performance.

## 7 CONCLUSIONS

This thesis has studied the impact of cultural and psychic distance as well as nationality of the firm on the use of output, process and social control mechanisms exerted headquarters and regional offices over its foreign subsidiaries in Lithuania. Also relationship between subsidiary control mechanisms and performance, and influence of cultural and psychic distances on this relationship were empirically tested. First, the theoretical concepts of culture and control were defined and their elements discussed. Second, prior academic research on the links between culture, control and performance is reviewed providing theoretical basis for the proposed conceptual model and hypothesis for foreign subsidiaries in Lithuania. Third, empirical research showed that different types of control mechanisms are differently influenced by subsidiary's cultural context and that subsidiary performance is influenced by the chosen control system. Finally, results are summarized and synthesized with literature review and recommendations for managers and further research are presented. Significant findings of the thesis are the following:

1. Literature review shows that there is no unified approach to measuring culture or cultural distance. The choice is highly dependent on researcher's preferences: may it be firm's nationality, Hofstede's cultural dimensions, Kogut and Singh index of cultural distance or other model. All methods are criticized to have their disadvantages and sometimes produce mixed results. However, psychic distance has showed better results in describing problems faced at organizational level than cultural distance on national level.
2. Literature review also show that effective use of output, process and social control mechanisms in foreign operations is impacted various aspects of the cultural settings (cultural distance, nationality, psychic distance) of principal and agent. Existing research emphasizes that the fit (adapted for specific culture) of the chosen control system in turn affects the performance.
3. Results show that psychic distance has a stronger relationship and better explains the levels of output and social controls exerted over foreign subsidiaries in Lithuania. However, cultural distance between Lithuania and country to which subsidiary is directly accountable to is significantly

---

link with process controls in subsidiaries in Lithuania. National culture of country of origin or the cultural distance between Lithuania and country of origin has no significant effect on subsidiary control systems in Lithuania.

4. Empirical testing results show that psychic distance is positively linked with levels of output controls and negatively linked with process controls in foreign subsidiaries based in Lithuania. Process control is negatively linked to the cultural distance between country of direct accountability and Lithuania.
5. Results show that only output control mechanisms have significant impact on subsidiary control in Lithuania. Research fails to find significant link between performance and process or social controls in studied subsidiaries. Whereas, prior research by Bello (1997) found that process controls have negative impact on performance. Such findings suggest that relatively high importance and attention should be placed on output control mechanisms when designing control systems for foreign subsidiaries in Lithuania.

---

## 8 REFERENCES

- Adler, N. J., & Gundersen, A. (2008). *International dimensions of organizational behavior*. Mason, Ohio: Thomson South-Western.
- Bello, D. C., Chelariu, C., & Zhang, L. (2003). The antecedents and performance consequences of relationalism in export distribution channels. *Journal of Business Research*, 56(1), 1-16.
- Bello, D. C., & Gilliland, D. I. (1997). The effect of output controls, process controls, and flexibility on export channel performance. *The Journal of Marketing*, 22-38.
- Bryman, A. (2012). *Social research methods*. Oxford: Oxford University Press.
- Child, J. (1984). *Organization: A guide to problems and practice*: Sage Publications Ltd.
- Creswell, J. W. (2003). *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, Calif.: Sage Publications.
- Eisenhardt, K. M. (1989). Agency theory: An assessment and review. *Academy of management review*, 57-74.
- Fukuyama, F. (1995). *Trust: the social virtues and the creation of prosperity*. New York: Free Press.
- Hair, J. F. (2010). *Multivariate data analysis: a global perspective*. Upper Saddle River, N.J.: Pearson.
- Hall, E. T. (1977). *Beyond culture*. Garden City, New York: Anchor Press.
- Hamilton Iii, R. D., & Kashlak, R. J. (1999). National Influences on Multinational Corporation Control System Selection. [Article]. *Management International Review (MIR)*, 39(2), 167-189.
- Hampden-Turner, C., & Trompenaars, F. (1994). *The seven cultures of capitalism: value systems for creating wealth in the United States, Britain, Japan, Germany, France, Sweden, and the Netherlands*. London: Piatkus.
- Harper, D. (2012). Online Etymology Dictionary Retrieved August 07, 2012, from <http://www.etymonline.com/index.php?term=culture>
- Harzing, A.-W. K. (1999). *Managing the multinationals: an international study of control mechanisms*. Cheltenham: Edward Elgar.
- Hofstede, G. (2001). *Culture's consequences: comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, Calif.: Sage.

- 
- Hofstede, G. (2006). What did GLOBE really measure? Researchers' minds versus respondents' minds. *Journal of International Business Studies*, 37(6), 882-896.
- Hofstede, G. (2012). National Culture Dimensions Retrieved August 11, 2012, from <http://geert-hofstede.com/dimensions.html>
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: software of the mind : intercultural cooperation and its importance for survival*. New York: McGraw-Hill.
- Hornby, A. S., Lea, D., Ashby, M., Turnbull, J., Parkinson, D., & Phillips, P. (2010). *Oxford advanced learner's dictionary of current English*. Oxford: Oxford University Press.
- House, R. J. (2004). *Culture, leadership, and organizations: the GLOBE study of 62 societies*. Thousand Oaks, Calif.: Sage.
- Huettinger, M. (2008). Cultural dimensions in business life: Hofstede's indices for Latvia and Lithuania. *Baltic Journal of Management*, 3(3), 359-376.
- Javidan, M., House, R. J., Dorfman, P. W., Hanges, P. J., & De Luque, M. S. (2006). Conceptualizing and measuring cultures and their consequences: A comparative review of GLOBE's and Hofstede's approaches. *Journal of International Business Studies*, 37(6), 897-914.
- Jones, M. L. (2007). Hofstede-Culturally questionable?
- Kirsch, L. J. (1996). The Management of Complex Tasks in Organizations: Controlling the Systems Development Process. [Article]. *Organization Science*, 7(1), 1-21.
- Kluckhohn, A. L. K. C. (1952). *Culture: A Critical Review of Concepts and Definitions* (Vol. 47). Cambridge: Peabody Museum Papers.
- Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, 411-432.
- Kwast, L. E. (1992). *Understanding Culture Perspectives on the World Christian Movement*. Pasadena, California: William Carey Library.
- Lessem, R., & Neubauer, F. (1994). *European management systems: towards unity out of cultural diversity*. London: McGraw-Hill Book Co.
- Leung, K. (2006). Editor's introduction to the exchange between Hofstede and GLOBE. *Journal of International Business Studies*, 37(6), 881-881.
- Lewis, R. D. (2006). *When cultures collide: leading across cultures*. Boston, Mass.: Nicholas Brealey.

- 
- McSweeney, B. (2002). Hofstede's model of national cultural differences and their consequences: A triumph of faith-a failure of analysis. *Human relations*, 55(1), 89-118.
- Merchant, K. A., & Stede, W. v. d. (2007). *Management control systems: performance measurement, evaluation and incentives*. Harlow: Prentice Hall/Financial Times.
- Morden, T. (1999). Models of national culture – a management review. [DOI: 10.1108/13527609910796915]. *Cross Cultural Management: An International Journal*, 6(1), 19-44.
- Newman, K. L., & Nollen, S. D. (1996). Culture and congruence: The fit between management practices and national culture. *Journal of International Business Studies*, 753-779.
- Ouchi, W. G. (1979). A CONCEPTUAL FRAMEWORK FOR THE DESIGN OF ORGANIZATIONAL CONTROL MECHANISMS. [Article]. *Management Science*, 25(9), 833-848.
- Salkind, N. J. (2010). *Encyclopedia of research design*. Thousand Oaks, Calif.: Sage.
- Schein, E. H. (2010). *Organizational culture and leadership*. San Francisco, Calif.: Jossey-Bass.
- Schermerhorn, J. R. (2011). *Introduction to management*. Hoboken, N.J.: Wiley.
- Shenkar, O. (2001). Cultural distance revisited: Towards a more rigorous conceptualization and measurement of cultural differences. *Journal of International Business Studies*, 519-535.
- Skarmeas, D., Katsikeas, C. S., & Schlegelmilch, B. B. (2002). Drivers of commitment and its impact on performance in cross-cultural buyer-seller relationships: the importer's perspective. *Journal of International Business Studies*, 757-783.
- Smith, P. B. (2006). When elephants fight, the grass gets trampled: The GLOBE and Hofstede projects. *Journal of International Business Studies*, 37(6), 915-921.
- Solberg, C. A. (2008). Product Complexity and Cultural Distance Effects on Managing International Distributor Relationships: A Contingency Approach. [Article]. *Journal of International Marketing*, 16(3), 57-83. doi: 10.1509/jimk.16.3.57
-

- 
- Tasoluk, B., Yaprak, A., & Calantone, R. J. (2006). Emerald Article: Conflict and collaboration in headquarters-subsiary relationships: An agency theory perspective on product rollouts in an emerging market. *Management*, 17(4), 332-351.
- Tylor, E. B. (1891). *Primitive Culture* (Vol. I). London: John Murray.
- Welch, L. S., Benito, G. R. G., & Petersen, B. (2007). *Foreign operation methods: theory, analysis, strategy*. Cheltenham: Edward Elgar.
- Wilkinson, T. J., Peng, G. Z., Brouthers, L. E., & Beamish, P. W. (2008). The diminishing effect of cultural distance on subsidiary control. [Article]. *Journal of International Management*, 14(2), 93-107. doi: 10.1016/j.intman.2007.08.003
- Williamson, D. (2002). Forward from a critique of Hofstede's model of national culture. *Human relations*, 55(11), 1373-1395.

## **9 APPENDICES**

## **9.1 APPENDIX 1: SURVEY QUESTIONS IN ENGLISH**

### **1. Output control**

- 1.1. Some firms exert a high degree of results control, by means of a continuous evaluation of the results of subsidiaries. Other firms exert little results control beyond the requirement of occasional financial reports. Please indicate the degree of results control (such as financial reports, market share etc.) that headquarters exerts over your subsidiary.
- 1.2. Some firms have a very detailed planning, goal setting and budgeting system that includes clear-cut (often quantitative) objectives to be achieved at both strategic and operational level. Other firms have less developed systems. Please indicate the degree of detailed and rigorous planning/goal setting/budgeting that headquarters uses in respect of this subsidiary.
- 1.3. Some firms require regular reporting of their performance indicators, goal achievement and adherence to budget. Please indicate the regularity of such reports that is required by headquarters.

### **2. Process control**

- 2.1. In some firms, all subsidiaries are supposed to operate in more or less the same way: In other firms, such standardized policies are not required. In general, what is the degree of standardization that headquarters requires from this subsidiary.
- 2.2. Some firms have written rules and procedures for everything and employees are expected to follow these procedures accurately. Other firms do not have such strict rules and procedures, or if they have, there is some leniency about following them. Please indicate the degree to which written rules and procedures are imposed by headquarters on this subsidiary.
- 2.3. Some firms regularly monitor the operations of their subsidiaries. Other firms only occasionally check-up with their subsidiaries about adherence to norms and standards. Please indicate the degree of monitoring that headquarters exert over this subsidiary.

**3. Social control**

- 3.1. Some firms attach a lot of value to a strong “corporate culture” and try to ensure that all subsidiaries share the main values of the firm. Others do not make these efforts (or, having made them, have had no success). To what extent the executives in this subsidiary share company’s main values.
- 3.2. Some firms have a very high degree of informal communication among executives of different subsidiaries and headquarters. Other firms do not foster that kind of informal communication and rely exclusively on formal communication channels. Please indicate the level of informal communication between this subsidiary and headquarters/other subsidiaries of the group.
- 3.3. Some firms make extensive use of committees/task forces/project groups, both temporary and permanent, made up by executives from different subsidiaries and headquarters. To what extent have this subsidiary’s executives participated in these kinds of groups in the past three years?
- 3.4. Some firms require subsidiary managers to be trained or receive work experience at headquarters. Other do not emphasize the need for headquarters training for managers. Please indicate the degree of headquarters training that managers of this subsidiary receive.

**4. Psychic distance**

Describe the following aspect of subsidiaries relationship with headquarters:

- 4.1. There are great cultural differences between the subsidiary and headquarters.
- 4.2. The cultural differences that exist between Lithuania and country of headquarters represent great problems in our relations with headquarters.
- 4.3. There are no language problems between the subsidiary and headquarters (reversed).

**5. Product Complexity**

Describe the following aspects of products/services that subsidiary is responsible for:

- 5.1. Degree of complexity
- 5.2. Degree of technological innovation

### 5.3. Need for maintenance

## **6. Market Volatility**

Describe the subsidiary's business environment in Lithuania in the following aspects:

- 6.1. Stability (reversed)
- 6.2. Certainty (reversed)
- 6.3. Speed of change

## **7. Subsidiary Performance**

Describe the performance of Lithuanian subsidiary in the following aspects:

- 7.1. Profit goals achievement
- 7.2. Growth goals achievement
- 7.3. Sales goals achievement

## **8. Company Information**

- 8.1. What is the name of your company?
- 8.2. How many employees does the subsidiary in Lithuania have?
- 8.3. When was the subsidiary in Lithuania found?
- 8.4. In which country is your company's headquarters based?
- 8.5. Does the subsidiary report directly to headquarters?
- 8.6. If not, in which is your company's regional office that the subsidiary reports to based?

## 9.2 APPENDIX 2: LIST OF VARIABLE ABBREVIATIONS

Variable abbreviation	Variable explanation
OC	Output control
PC	Process control
SC	Social control
SP	Subsidiary performance
MV	Market Volatility
Pco	Product Complexity
PD	Psychic Distance between country of direct accountability and Lithuania
PDLog	Psychic Distance variable transformed by Log10 function
Age	Age of the subsidiary
Size	Size of the subsidiary in terms of employees
CDH	Cultural distance between country of origin and Lithuania
PDHDist	Power Distance distance between country of origin and Lithuania
IDVHDist	Individualism distance between country of origin and Lithuania
MASHDist	Masculinity distance between country of origin and Lithuania
UAIHDist	Uncertainty Avoidance distance between country of origin and Lithuania
LTOHDist	Long-term Orientation distance between country of origin and Lithuania
PDIH	Power Distance of country of origin
IDVH	Individualism of country of origin
MASH	Masculinity of country of origin
UAIH	Uncertainty Avoidance of country of origin
LTOH	Long-term Orientation of country of origin
CDD	Cultural distance between country of direct accountability and Lithuania
PDIDDist	Power Distance distance between country of direct accountability and Lithuania
IDVDist	Individualism distance between country of direct accountability and Lithuania
MASDDist	Masculinity distance between country of direct accountability and Lithuania
UAID	Uncertainty Avoidance distance between country of direct accountability and Lithuania
LTODDist	Long-term Orientation distance between country of direct accountability and Lithuania
PDID	Power Distance of country of direct accountability
IDVD	Individualism of country of direct accountability
MASD	Masculinity of country of direct accountability
UAIDDist	Uncertainty Avoidance of country of direct accountability
LTOD	Long-term Orientation of country of direct accountability

### 9.3 APPENDIX 3: NORMALITY TESTS

Tests of Normality						
	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
OC	.149	43	.017	.936	43	.018
PC	.182	43	.001	.882	43	.000
SC	.147	43	.020	.948	43	.050
PD	.119	43	.143	.952	43	.071
PDLog	.151	43	.015	.923	43	.007
Pco	.188	43	.001	.948	43	.051
MV	.146	43	.022	.965	43	.215
SP	.159	43	.008	.927	43	.009
Age	.133	43	.053	.947	43	.047
Size	.332	43	.000	.530	43	.000
CDH	.187	43	.001	.767	43	.000
PDIHDist	.379	43	.000	.546	43	.000
IDVHDist	.348	43	.000	.637	43	.000
MASHDist	.216	43	.000	.821	43	.000
UAIHDist	.302	43	.000	.758	43	.000
LTOHDist	.400	43	.000	.258	43	.000
PDIH	.296	43	.000	.747	43	.000
IDVH	.240	43	.000	.867	43	.000
MASH	.317	43	.000	.806	43	.000
UAIH	.197	43	.000	.914	43	.003
LTOH	.204	43	.000	.800	43	.000
CDD	.243	43	.000	.878	43	.000
PDIDDist	.380	43	.000	.625	43	.000
IDVDist	.368	43	.000	.486	43	.000
MASDDist	.317	43	.000	.779	43	.000
UAIDist	.393	43	.000	.654	43	.000
LTODDist	.287	43	.000	.787	43	.000
PDID	.229	43	.000	.807	43	.000
IDVD	.184	43	.001	.824	43	.000
MASD	.238	43	.000	.858	43	.000
UAID	.248	43	.000	.849	43	.000
LTOD	.192	43	.000	.902	43	.001

a. Lilliefors Significance Correction

#### 9.4 APPENDIX 4: CORRELATION MATRIX

	OC	PC	SC	SP	PDLog	Pco	MV	Size	Age
OC	1	.615**	-0.008	.479**	0.217	.334*	-0.087	0.285	0.131
Sig.		0	0.959	0.001	0.162	0.028	0.579	0.064	0.403
N	43	43	43	43	43	43	43	43	43
PC	.615**	1	0.167	0.274	0.211	0.283	-0.124	0.034	0.058
Sig.	0		0.284	0.076	0.175	0.066	0.429	0.829	0.71
N	43	43	43	43	43	43	43	43	43
SC	-0.008	0.167	1	0.126	-.407**	.356*	0.142	-0.02	-0.13
Sig.	0.959	0.284		0.422	0.007	0.019	0.364	0.897	0.405
N	43	43	43	43	43	43	43	43	43
SP	.479**	0.274	0.126	1	-0.25	0.212	0.108	0.007	0.159
Sig.	0.001	0.076	0.422		0.106	0.173	0.489	0.965	0.309
N	43	43	43	43	43	43	43	43	43
PDLog	0.217	0.211	-.407**	-0.25	1	-0.097	-0.21	0.104	0.052
Sig.	0.162	0.175	0.007	0.106		0.536	0.177	0.508	0.741
N	43	43	43	43	43	43	43	43	43
Pco	.334*	0.283	.356*	0.212	-0.097	1	-0.29	0.057	-0.145
Sig.	0.028	0.066	0.019	0.173	0.536		0.06	0.719	0.354
N	43	43	43	43	43	43	43	43	43
MV	-0.087	-0.124	0.142	0.108	-0.21	-0.29	1	-0.093	0.056
Sig.	0.579	0.429	0.364	0.489	0.177	0.06		0.552	0.72
N	43	43	43	43	43	43	43	43	43
Size	0.285	0.034	-0.02	0.007	0.104	0.057	-0.093	1	0.195
Sig.	0.064	0.829	0.897	0.965	0.508	0.719	0.552		0.21
N	43	43	43	43	43	43	43	43	43
Age	0.131	0.058	-0.13	0.159	0.052	-0.145	0.056	0.195	1
Sig.	0.403	0.71	0.405	0.309	0.741	0.354	0.72	0.21	
N	43	43	43	43	43	43	43	43	43

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

## 9.5 APPENDIX 5: MULTIPLE REGRESSION ANALYSIS

### Output control as a dependent variable.

		Excluded Variables					Collinearity Statistics	
Model		Beta In	t	Sig.	Partial Correlation	Tolerance	VIF	
1	CDH	-.090	-.754	.456	-.123	.963	1.038	
	CDD	-.146	-1.019	.315	-.165	.663	1.509	
	PDIHDist	.112	.921	.363	.150	.922	1.084	
	IDVHDist	-.121	-.836	.408	-.136	.653	1.532	
	MASHDist	-.022	-.188	.852	-.031	.987	1.013	
	UAIHDist	-.087	-.710	.482	-.116	.916	1.092	
	LTOHDist	-.107	-.887	.381	-.144	.949	1.054	
	PDIDDist	-.040	-.304	.763	-.050	.798	1.252	
	IDVDDist	.010	.031	.975	.005	.150	6.675	
	MASDDist	-.165	-1.413	.166	-.226	.981	1.019	
	UAIDDist	-.103	-.820	.418	-.134	.871	1.148	
	LTODDist	-.003	-.028	.978	-.005	.935	1.070	
	PDIH	.061	.498	.621	.082	.934	1.070	
	IDVH	-.107	-.704	.486	-.115	.597	1.675	
	MASH	-.011	-.090	.929	-.015	.989	1.011	
	UAIH	.112	.912	.368	.148	.911	1.098	
	LTOH	-.092	-.737	.466	-.120	.898	1.114	
	PDID	.036	.304	.763	.050	.985	1.016	
	MASD	-.199	-1.714	.095	-.271	.969	1.032	
	UAID	.041	.294	.771	.048	.731	1.369	
	LTOD	-.082	-.656	.516	-.107	.881	1.135	
	MV	-.038	-.289	.774	-.048	.818	1.223	
	Size	.194	1.654	.107	.262	.956	1.046	
	Age	.044	.355	.725	.058	.923	1.084	

**Process control as dependent variable****Excluded Variables**

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
					Tolerance	VIF	
1	CDH	-.026	-.179	.859	-.029	.958	1.044
	PDIHDist	.238	1.659	.105	.257	.938	1.066
	IDVHDist	.074	.497	.622	.079	.916	1.092
	MASHDist	-.028	-.167	.868	-.027	.733	1.364
	UAIHDist	-.137	-.917	.365	-.145	.914	1.094
	LTOHDist	-.164	-1.132	.264	-.178	.953	1.050
	CDD	.027	.145	.885	.023	.623	1.606
	PDIDDist	.153	.878	.385	.139	.668	1.498
	IDVDDist	-.009	-.060	.953	-.010	.964	1.037
	UAIDDist	-.029	-.199	.844	-.032	.956	1.046
	LTODDist	-.002	-.011	.991	-.002	.796	1.257
	PDLog	.265	1.916	.063	.293	.986	1.015
	PDIH	.163	1.153	.256	.182	.995	1.005
	IDVH	.038	.252	.803	.040	.924	1.082
	MASH	.081	.453	.653	.072	.645	1.550
	UAIH	.226	1.534	.133	.239	.903	1.107
	LTOH	-.071	-.486	.630	-.078	.977	1.023
	PDID	.152	1.060	.296	.167	.985	1.015
	IDVD	-.010	-.070	.945	-.011	.997	1.003
	MASD	.119	.273	.786	.044	.109	9.139
	UAID	.194	1.322	.194	.207	.923	1.084
	LTOD	.092	.637	.528	.102	.975	1.026
	MV	-.207	-1.304	.200	-.204	.786	1.273
	SP	.183	1.260	.215	.198	.940	1.064
	Size	-.077	-.518	.608	-.083	.926	1.080
	Age	.111	.770	.446	.122	.978	1.022

**Social Control as a dependent variable**

		Excluded Variables					
Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
						Tolerance	VIF
1	CDH	.164	1.203	.236	.189	.971	1.030
	PDIHDist	.173	1.283	.207	.201	.992	1.008
	IDVHDist	.044	.294	.770	.047	.845	1.183
	MASHDist	-.072	-.523	.604	-.083	.993	1.007
	UAIHDist	.131	.942	.352	.149	.946	1.057
	LTOHDist	.149	1.088	.283	.172	.968	1.033
	CDD	-.052	-.378	.707	-.060	.992	1.009
	PDIDDist	-.029	-.209	.836	-.033	.981	1.019
	IDVDDist	-.098	-.712	.481	-.113	.986	1.014
	MASDDist	-.035	-.254	.801	-.041	.995	1.005
	UAIDDist	.050	.353	.726	.056	.935	1.070
	LTODDist	.080	.579	.566	.092	.984	1.016
	PDIH	.153	1.133	.264	.178	.996	1.004
	IDVH	-.105	-.707	.484	-.112	.836	1.197
	MASH	-.109	-.796	.431	-.126	.991	1.009
	UAIH	.066	.473	.639	.076	.955	1.047
	LTOH	.057	.411	.683	.066	.968	1.033
	PDID	-.045	-.326	.746	-.052	.986	1.015
	IDVD	-.130	-.956	.345	-.151	.999	1.001
	MASD	.035	.254	.801	.041	.983	1.017
	UAID	-.094	-.674	.504	-.107	.964	1.037
	LTOD	.086	.612	.544	.098	.936	1.069
	MV	.181	1.249	.219	.196	.859	1.164
	SP	-.040	-.276	.784	-.044	.902	1.109
	Size	.001	.004	.997	.001	.985	1.015
	Age	-.066	-.477	.636	-.076	.978	1.023

## 9.6 APPENDIX 6: MODERATION ANALYSIS

**Descriptive Statistics**

	Minimum	Maximum	Mean	Std. Deviation	Variance
Zscore(SP)	-2.63892	1.72545	0.000	1.000	1.000
Zscore(OC)	-2.30644	1.43609	0.000	1.000	1.000
Zscore(PC)	-2.12649	1.04023	0.000	1.000	1.000
Zscore(SC)	-2.05946	1.99658	0.000	1.000	1.000
Zscore(CDH)	-1.15263	4.62259	0.000	1.000	1.000
Zscore(CDD)	-1.16146	2.61828	0.000	1.000	1.000
Zscore(PDLog)	-1.81045	1.64813	0.000	1.000	1.000
Valid N (listwise)					

No moderation.

**Excluded Variables**

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	VIF
1 Zscore(PC)	-.034	-.191	.849	-.030	.622	1.609
Zscore(SC)	.130	.944	.351	.148	1.000	1.000