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Master in Management Program

Factors of Influence on the Stability of Strategic Alliances

Master thesis by the 2nd year student

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ЗАЯВЛЕНИЕ О САМОСТОЯТЕЛЬНОМ ХАРАКТЕРЕ ВЫПОЛНЕНИЯ

ВЫПУСКНОЙ КВАЛИФИКАЦИОННОЙ РАБОТЫ

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I, __Anastasiia Reusova__, (second) year master student, program «Management», state that my master thesis on the topic «Factors of Influence on the Stability of Strategic Alliances», which is presented to the Master Office to be submitted to the Official Defense Committee for the public defense, does not contain any elements of plagiarism.

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_____26.05.2016_____ (Date)

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АННОТАЦИЯ

Автор	Реусова Анастасия Игоревна
Название магистерской диссертации	Факторы влияния на устойчивость стратегических альянсов
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Описание цели, задач и основных результатов	Целью исследования является выявление взаимосвязей между устойчивостью стратегических альянсов и межорганизационными факторами. Задачи исследования: (1) на основании анализа академической литературы дать определение устойчивости стратегических альянсов; (2) разработать концептуальную модель факторов устойчивости стратегических альянсов; (3) на основании эмпирического исследования сделать выводы о связях между устойчивостью стратегических альянсов и ее факторами. Результаты показали, что долгосрочная ориентация партнеров значимо влияет на внешнюю устойчивость, тогда как взаимодополняемость ресурсов и доверие, а также внешняя устойчивость влияют на внутреннюю устойчивость стратегических альянсов. Более того, подтвердилось предположение о положительном влиянии взаимодополняемости ресурсов на доверие, и доверия – на долгосрочную ориентацию партнеров.
Ключевые слова	Устойчивость стратегических альянсов, внутренняя устойчивость, внешняя устойчивость, доверие, долгосрочная ориентация, взаимодополняемость ресурсов, теория игр, теория ресурсного преимущества.

ABSTRACT

Master Student's Name	Anastasiia Reusova
Master Thesis Title	Factors of Influence on the Stability of Strategic Alliances
Faculty	Graduate School of Management
Main field of study	Management
Year	2016
Academic Advisor's Name	Nikolay A. Zenkevich, Associate Professor
Description of the goal, tasks and main results	The goal of the study is to identify relationships between strategic alliance stability and inter-organizational strategic alliance stability factors. Research objectives are: (1) based on academic literature analysis on strategic alliances, define the term of strategic alliance stability; (2) develop a conceptual model of strategic alliance stability factors; (3) based on empirical research, make conclusions about relationships between strategic alliances stability and its factors. Results show that partners' long-term orientation significantly and positively influences external stability, while resource complementarity and trust influence strategic alliance internal stability. Moreover, the assumptions on the positive association between resource complementarity and trust, and between trust and long-term orientation have been supported.
Keywords	Strategic alliance stability, external stability, internal stability, trust, long-term orientation, resource complementarity, game theory, resource-advantage theory

PREFACE AND ACKNOWLEDGEMENTS

Writing this Master thesis was truly an exciting academic journey, a great experience I have gained during my Master studies at GSOM. It was a challenging and exciting process, and I would like to briefly thank people who have helped me in accomplishing this journey by investing their time and encouraging my interest to the study.

By grasping this opportunity, I kindly express my gratitude to Nikolay A. Zenkevich, my research advisor, Anton Grigoryev, without whose support I would have never completed the empirical part of a research, as well as Siegfried Leidig, Andrew Ewing, Victor Wan, Saha Banibrata, Joe Kittel and Anil Nell who have spent a significant amount of time providing me with a managerial perspective on the issue of strategic alliance stability.

Anastasiia Reusova,

Saint Petersburg,

June, 2016

LIST OF ABBREVIATIONS AND ACRONYMS

AVE	Average variance extracted
CR	Construct reliability
ES	External stability
IJV	International joint venture
IS	Internal stability
JV	Joint venture
LTO	Long-term orientation
MI	Modification index
MM	Measurement model
R-A	Resource-advantage
RBV	Resource-based view
SA	Strategic alliance
SAS	Strategic alliance stability
SEM	Structural equation modeling
SM	Structural model
SR	Standardized residuals
T	Trust
TCE	Transaction-cost economy
WOS	Wholly-owned subsidiary

INTRODUCTION

Research background. The last 50 years have shown an immense growth in emergence of strategic alliances. Hence, the attention of researchers and practitioners to this issue has been increasing (Christoffersen, 2013). The growth of the number of strategic alliances was especially noticeable starting from the 80s, which corresponded to the growing relational and institutional complexity of managing these forms of collaboration. Strategic alliances are widely recognized to be a helpful form on inter-organizational relationships that aids firms in standing against the competition in a complex business environment (Akkaya, 2007) and in creating customer value (Iyer, 2002; Umukoroa, Sulaimonb, Kuyeb, 2009). However, some scholars estimate the failure rate of strategic alliances to mount to 60-65% due to unmet objectives, failed expectations or other reasons (Geringer and Hebert, 1991; Umukoroa, Sulaimonb, Kuyeb, 2009; Gibbs, Humphries, 2016). At the same time, growing competition, raising research and development costs, shortening product life cycles lead to a new surge in emergence of strategic alliances (Gibbs, Humphries, 2016).

Academic studies on strategic alliances have been carried out for at least 50 years with the past 30 years being the most intense (Umukoroa, Sulaimonb and Kuyeb, 2009). The earliest studies on strategic alliances include (Friedmann and Kalmanoff, 1961; Franko, 1971). With the passage of time, along with strategic alliances growing prevalence, the studies on strategic alliances were progressing from the most broad to increasingly specific, addressing specific types of alliances (e.g., joint ventures, international joint ventures, non-equity alliances, international strategic alliances) and specific issues in alliances (e.g., motivation for collaboration, alliance performance, alliance stability).

The interest to strategic alliances is not only academic, because (Vyas, Shelburn, Rogers, 1995) it is crucial for a partner entering an alliance to have a thorough understanding of an alliance along with its requirements, objectives, expectations and expected benefits.

Strategic alliance stability is in the focus of this particular study. Stability of long-term cooperative decisions, and strategic alliance stability in particular, is recognized to be a fundamental problem that is studied in academic literature for the last 30 years. The problem of strategic alliance stability is widely recognized not only by scholars, but also by practitioners (Zenkevich, Koroleva, Mamedova, 2014a, b). The drawback of most of the researches on the topic is in viewing strategic alliance stability as a static (Jiang, Li and Gao, 2008) and one-dimensional concept (Zenkevich, Koroleva, Mamedova, 2014a), while relationships between partners in an

alliance are certainly dynamic, and managing this dynamics is challenging (Douma et. al. 2000; Buffenoir, Bourdon, 2013).

Problem statement. Many issues related to strategic alliance stability remain arguable. On the one hand, strategic alliance stability is well studied in game theory as a part of cooperative decisions stability (Zenkevich, Koroleva, Mamedova, 2014a,b). On the other hand, there has been a significant number of attempts to study strategic alliance stability determinants, e.g., trust, partners' goal congruence, governance mechanisms (Jiang, Li and Gao, 2008; Deitz et al, 2010; Christoffersen, Plenborg and Robson, 2014; Isidor et al, 2015; Qing, Zhang, 2015). However, many of those studies show contradictory results due to different reasons, in particular, because the concept of strategic alliance stability lacks precision (Jiang, Li and Gao, 2008). Moreover, there is a scarcity of papers to provide managers with a comprehensive tool for strategic alliance stability management.

This research contributes to the field by attempting to identify relationships between strategic alliances stability and its factors, connecting the two fields of studies: game theory and resource-advantage theory. Viewing the problem from a game theory perspective, the research adopts a strategic alliance stability definition and conceptualization provided by Zenkevich, Koroleva, Mamedova (2014a). On another hand, the paper contributes to a series of studies dedicated to identify strategic alliance stability factors using resource-advantage theory.

Research goal and objectives. This study is aimed at providing an integrated approach to the concept of SAS stability and its factors. Therefore, the research goal is the following:

Research goal	Identification of relationships between strategic alliance stability and inter-organizational strategic alliance stability factors.

In order to attain the research goal, several research objectives (RO) have to be addressed. These ROs stem from the research goal and unfold the paper logic.

RO1	Based on academic literature analysis on strategic alliances, define the term of strategic alliance stability.
RO2	Develop a conceptual model of strategic alliance stability factors.
RO3	Based on empirical research, make conclusions about relationships between strategic alliances stability and its factors.

Research questions. In order to achieve goals and to complete objectives of the study, the two research questions (RQ) were formulated.

RQ1	What are the relationships between strategic alliance stability inter-organizational factors and different components of strategic alliance stability?
RQ2	What are potential indirect effects of strategic alliance stability factors on different components of strategic alliance stability?

Research methodology. Research methodology is linked to the research process, which starts from the theoretical overview of existing academic literature and building up a theoretical base on the issue, and is followed by empirical analysis (Hussey et al. 1997). Therefore, a relevant research methodology is critical for a successful research in order to adequately address research goal and objectives, and provide the answer to research questions.

Research types can be classified by the purpose of the study, research process, research logic, research outcome Hussey et al. (1997). The table below summarizes on these approaches.

Classification	**Type of research**	**Research design used in this thesis**
Purpose of the study	Exploratory, explanatory, descriptive, analytical or predictive	Explanatory/Exploratory
Process of the research	Quantitative or qualitative research	Quantitative research
Logic of the research	Deductive or inductive research	Deductive research
Outcome of the research	Applied or basic research	Applied research

Source: adapted from Hussey et al. (1997), Van Dijk (2014)

According to the purpose of the research, this paper can be classified as explanatory as the paper is aimed at identifying the connections between SAS factors and SAS components based on the analysis of existing literature on the matter. However, as the research is aimed at studying a multi-component stability phenomena in connection to strategic alliance stability factors, which has not been done previously, the research has an exploratory purpose as well.

As for the process of the research, it builds upon theoretical model development which comes as a result from academic literature analysis, and then puts the theoretical model under empirical test. Therefore, a research can be classified as deductive (Hussey et al., 1997).

Due to the reason that strategic alliance stability is considered by management practitioners, but not thoroughly understood by them, it is expected that the results of a research will have an applied nature.

Scope and limitations of the study. The data for an empirical part of the research was collected through a web-based questionnaire. As the questionnaire was web-based, a link to it was distributed to companies that might have potentially been involved into strategic alliances by email.

Survey respondents were European companies' employees that were involved in strategic alliances. There was no particular focus on a type of a strategic alliance or on the industry an alliance operates in. The database of contact details that was used to approach respondents had been compiled of different sources, particularly from SDC Platinum and Amadeus (Bureau van Dijk) database. The total number of respondent equaled 184, however, later, the sample was decreased to 175 observations.

The analysis provided in the paper makes a contribution to theoretic literature on strategic alliances as a form of long-term collaboration and draws practical conclusions for the use of strategic alliance managers. Specifically, results reported in this research indicate that there are different relationships between different strategic alliance stability components and strategic alliance stability factors, which implies that there is a rationale for viewing strategic alliance stability as a multidimensional construct.

Several limitations of the study have their place. Firstly, strategic alliances are studied in general, and the differentiation among different types of alliances is not made. However, it might be true that in different types of alliances the factors that determine their stability are not the same (Jiang, Li and Gao, 2008). Secondly, no differentiation between industries an alliance operates in was made. Third, strategic alliance stability was regarded as a two-componential construct, while theory allows to view it as a more fragmented phenomena. Lastly, alliance size was not considered. All the limitations stem from difficulties connected to data collection and unwillingness of companies to disclose details of their cooperative agreements.

Outline of the paper. There are 6 parts in this paper, namely, introduction, chapters from one to three, conclusions and implications, limitations and further research. Chapter 1 provides the overview of academic literature on strategic alliances overall, strategic alliance success and stability as well as strategic alliance stability factors. In Chapter 2, conceptual model of strategic alliance stability factors was developed and research hypotheses have been articulated. Moreover, Chapter 2 describes research methodology, including data collection methods and results as well as empirical methods used for conceptual model testing. Chapter 3 is dedicated to empirical assessment of the conceptual model, done with structural equation modeling, which includes measurement model development and assessment, CFA, and finally, SEM test itself. In the end of

the Chapter 3, SEM results are analyzed. Theoretical contributions are articulated and practical implications are drawn in the following part. Lastly, an overview of research limitations and further research directions is done.

CHAPTER 1. STABILITY IN STRATEGIC ALLIANCES

1.1 Strategic alliances as a form of cooperation

There is an increasing number of studies in academic literature dedicated to issues associated with inter-firm cooperation (Umukoroa, Sulaimonb and Kuyeb, 2009). Strategic alliances (SAs) can be defined as an "interfirm cooperative arrangements aimed at achieving the strategic objectives of the partners" (Das and Teng 1998). There cooperative arrangements may be embodied in a form of manufacturer-supplier relationships, purchasing agreements, joint ventures, technology transfer agreements, outsourcing, etc. (Morgan and Hunt, 1994; Varadarajan and Cunningham, 1995; Lambe, Spekman and Hunt, 2002).

The first mentioning of strategic alliances in academic literature goes back to the year 1923, and mentioned by Hoxie (1923) in relation to trade unions. Since then, the concept and the nature of strategic alliances has evolved quite noticeably and has been developing rapidly for the last 30 years (Ferreira, Storopoli and Serra, 2014; Gomes, Barnes and Mahmood, 2014). Multiple theories are used to explain reasons for strategic alliances establishment, however, regardless the theoretical approach to SA establishment, the primary reason for this is the net positive value of the cooperation in a form of an alliance and expected benefits obtained by each partner (Qing, Zhang, 2015). Indeed, in case potential partners do not find it beneficial to enter into an alliance, they are unlikely to form the relationship or else, in case they are already in a relationship, they will not have motivation to maintain cooperation (Umukoroa, Sulaimonb and Kuyeb, 2009). The rest of the sub-chapter represents a theoretical overview on strategic alliances formation.

The emergence Williamson's of *transaction cost economics (TCE)* in 1970s has largely influenced the theory of cooperative relationships. This approach claims that firms search for ways of cost reduction related to their activities. TCE assumes that forming a strategic alliance helps firms reduce their transaction costs by reducing the uncertainty in dealing with their business partners (Williamson, 1979). Transaction costs theory attempts to explain motivation for SA creation as one of the ways to avoid ineffective transactions and costs associated with them. Ineffective transactions can occur due to several reasons: firstly, the transaction can put a company in a dependent-from-other-companies position (Kogut, 1988); secondly, ineffective markets where transactions are conducted can be a reason for high transaction costs; thirdly, the inefficiency of transactions may stem from company's own inefficiency in operations. However, TCE theory has its own limitations, and the most significant one is related to the fact that TCE views all the relationships from the point of possible cost reductions, disregarding possibilities for value creation (Lu et al, 2012).

Before late 1970s, strategic alliances were viewed as an auxiliary form of collaboration between firms that aided new markets' entry (Zenkevich, Koroleva, Mamedova, 2014a). Due to this reason, most of the studies before that time were focused on issues of international joint ventures (IJVs). Early studies in *inter-organizational (IO)* theory connected emergence of strategic alliances with specific industrial conditions (e.g., Berg and Friedman, 1978; Boyle, 1968), e.g. "convergent expectations and patterns of behavior, practice, shared beliefs, and mindsets" that lead to benefits connected with collaborative efforts in form of strategic alliances. These benefits might include reduced the transaction costs associated with partnering, fostering of cooperation through better infrastructure, institutional trust, and assurance that ties will be formed (Adobor, 2011). Looking at reasons for forming strategic alliances in broader terms, the reasoning can be summed up with the following: risk sharing, economies on scale, competitive threat opposition, setting new technological standards, new market entry, access to resources and competencies (Zenkevich, Koroleva, Mamedova, 2014a). However, this field of studies, emphasizing industrial factors that lead to emergence of strategic alliances, does not examine the issue of strategic alliance success (Yeung, Petrosyan, 2006).

Resource dependency approach compares companies and their performance on the basis of resources they have access to (Pfeffer, Nowak, 1976; Pfeffer and Salancik, 1978; Steensma and Lyles, 2000). This theory concentrates solely on resources that might be obtained by a company from the outside. From this perspective, strategic alliances are created to gain access to resources of a partner-company and/or to increase control over partner-companies (Zenkevich, Koroleva, Mamedova, 2014a).

In 1990s, the *resource-based view (RBV)* on firms got developed (Whipple, Frankel, 2000), and scholars in the field of strategy have shifted their focus from examination of the external alliance environment to internal resources and capabilities, which constitute firms' competitive advantage (Barney, 1991; Rumelt, 1991). Contrary to resource dependency concept, RBV is focused on valuable internal resources of the company as important for most of the companies to gain competitive advantage in the market (Barringer, Harrison, 2000). Following this logic, absence of required resources and competences within the firm is pushing it to build up competitive advantages by combining tangible and intangible resources in collaboration with other market participants (Barney, 1991, 1992; Sanchez, 2003). Dyer and Singh (1998) suggest that with increased globalization and intensified competition, it gets harder for firms to build up new competencies, maintain and develop competitive advantage themselves, which explains why it is beneficial for firms to enter into collaborative relationships, such as strategic alliances. The RBV

on strategic alliances was further developed into dynamic capabilities concept in the end of the XX century.

Nevertheless, RBV has some limitations that hinder its practical application. As outlined by Deitz et.al. (2010), there are two main limitations of RBV in regards to strategic alliances: firstly, RBV assumes “demand homogeneity” (Barney, 1991; Peteraf, 1993), secondly, it neglects subjective judgment and perception of decision-making agents, namely managers (Spender, 1996), that make decisions on which partners to choose for an alliance, how the resources should be combined, etc. (Foss, Ishikawa, 2007). E.g., *resource-advantage (R-A) theory* accounts for these deficiencies and extends RBV by combining it with “marketing's heterogeneous demand theory” (Alderson, 1957). A “distinctive competence” for a R-A theory is an “ability of a firm(s) to combine lower order resources” in way that is hardly imitable by competition (Yeung, Petrosyan, 2006; Lambe et al., 2002).

According to the *market power concept*, companies get involved into strategic alliances in order to improve their competitive position in the market relatively to the market (Kogut, 1988). Such an idea is also incorporated in the R-A theory (Hunt, Lambe and Wittmann, 2002). Gaining comparative competitive advantage involves not only building up companies’ superior position in the market, but also an attempt to hinder their competitors’ attempts to do the same. Empirical studies have shown that companies use SAs as a market-entry facilitation tool as well as a market-structure alteration tool (Hagedoorn, 1993).

With a growing number of strategic alliances in the world, the *social capital approach* to strategic alliances was offered in the beginning of XXI century as many then-current companies began to have a wide web of strategic alliances of different forms with many counterparts. Within the social approach, there are two distinctive research directions that were formed: *relationship approach* and *network structure approach*. Relationship approach treats strategic alliances from the viewpoint of social systems interactions because, in real life, strategic alliance establishment is based not only on economic benefits estimation, but also on relationship characteristics like trust, reputation, and communications. In this sense, social approach deals with deficiencies of a TCE theory (Adobor, 2011). According to *relationship* approach, strategic alliances are established, developed and terminated as a result of repetitive patterns of social interactions within a relationship between partners (Seabright, Levinthal, Fichman, 1992). The *network structure* approach studies a network that is formed around the company and its strategic alliances by different market elements (companies) connected to each other. The social network of a company affects its activities and behavior, e.g., the network might help company identify opportunities for strategic alliance creation (Gulati, 1998; Wilkinson, Young, 2002). Zaheer and Venkatraman

(1995) suggest that social capital theory in respect to cooperative relationships can be successfully combined with TCE, therefore, emphasizing the importance of both cost reduction and value creation in cooperative relationships, representing a more balanced approach compared to the use of each of them individually (Wu and Choi, 2004).

Table 1.1 summarizes discussions in the field of strategic alliances between years 1933 and 2012 with the most influential articles in each topic.

Table 1.1. Strategic alliances research topics

Discussion topics prevalent in the field of strategic alliances within different 5-year periods and most influential papers

Time period	Topic discussed	Most influential articles
1933-1997	Performance and competitive strategy	Porter (1990); Harrigan (1985); Harrigan (1986); Hamel and Prahalad (1989); Killing (1983); Geringer (1989); Reich and Mankin (1986); Hennart (1988); Ring and Van de Ven (1994); Pfeffer and Salancik (1978); Hamel (1991); Contractor and Lorange (1988); Harrigan (1988)
	International JVs	Kogut (1988); Parkhe (1991); Hladik (1985; Parkhe (1993a); Geringer (1991); Kogut (1989; Parkhe (1993b); Buckley and Casson (1988); Porter (1986); Osborn and Baughn (1990)
	Governance and transaction costs	Porter (1985); Axelrod (1984); Powell (1990); Williamson (1991); Williamson (1975); Porter (1980); Williamson (1985); Borys and Jemison (1989)
1998-2002	Transaction costs	Yan and Gray (1994); Killing (1983); Parkhe (1991); Hennart (1988); Ring and Van de Ven (1994); Inkpen and Beamish (1997); Parkhe (1993a); Hamel and Prahalad (1989); Borys and Jemison (1989); Doz (1996); Hamel (1991); Harrigan (1985); Williamson (1985)
	Learning, networks and access resources	Granovetter (1985); Burt (1992); Hagedoorn (1993); Dyer and Singh (1998); Powell et al. (1996); Eisenhardt and Schoonhoven (1996); Williamson (1991); Nelson and Winter (1982); Pfeffer and Salancik (1978); Cohen and Levinthal (1990); Mowery et al. (1996); Barney (1991)
	JVs: structure and Reciprocity	Kogut (1988); Kogut (1989); Ring and Van de Ven (1992)
	Inter-firm coordination	Gulati (1995a); Gulati (1998)
2003-2007	Learning and collaboration	Nelson and Winter (1982); Hagedoorn (1993); Powell et al. (1996); Lane and Lubatkin (1998); Mowery et al. (1996); Anand and Khanna (2000); Kale et al. (2002); Kogut and Zander (1992); Barney (1991); Cohen and Levinthal (1990); Koza and Lewin (1998); Eisenhardt and Schoonhoven (1996); Khanna et al. (1998); Hamel (1991)

Table 1.1. Continued

	Governance and transaction costs	Oxley (1997); Parkhe (1993a); Ring and Van de Ven (1994); Doz (1998); Hennart (1988); Williamson (1975); Inkpen and Beamish (1997); Williamson (1985); Williamson (1991); Kogut (1988); Doz (1996)
	Alliance formation and coordination	Gulati (1995a); Gulati (1998); Gulati (1995b); Gulati and Singh (1998); Zaheer, Gulati and Nohria (2000)
	Social networks	Dyer and Singh (1998)
2008-2012	Knowledge transfer and learning	Grant and Baden-Fuller (2004); March (1991); Kogut and Zander (1992); Teece et al. (1997); Lane and Lubatkn (1998); Mowery et al. (1996); Kale et al. (2000); Hamel (1991); Barney (1991); Nelson and Winter (1982); Khanna et al. (1998); Cohen and Levinthal (1990)
	Governance and transaction costs	Parkhe (1993a); Williamson (1975); Doz (1996); Williamson (1985); Kale et al. (2002); Kogut (1988); Anand and Khanna (2000)
	Social networks	Burt (1992); Baum et al. (2000); Ahuja (2000); Granovetter (1985); Uzzi (1997)
	Alliance formation and coordination	Gulati (1995a); Gulati and Singh (1998); Gulati (1998); Gulati (1995b)

Source: (Ferreira, Storopoli and Serra, 2014)

1.2 Explaining strategic alliance success

Considering alliance success from the RBV perspective (Barney, 1991, 1992; Conner, 1991; Peteraf, 1993; Wernerfelt, 1984), it is based on a fact that alliance partners contribute immobile and heterogeneous resources to the alliance that have to be combined together. *Complementary resources* can be defined as resources provided by partners that "fill out or complete their resource assortments" (Das and Teng, 2000; Jap, 1999; Varadarajan and Cunningham, 1995). The unique combinations of resources that exist within different alliances largely define whether or not an alliance is a success or a failure because by combining resources of each individual firm, partners can create unique, idiosyncratic resources that are developed through the lifetime of an alliance (Hunt and Morgan, 1995; Jap, 1999; Anderson and Weitz, 1992; Jap, 1999; Lambe, Spekman, and Hunt, 2000).

Considering the *competence-based theory* (Hunt, Lambe and Wittmann, 2002), alliances that succeed develop specific competences that lead them to success. *Competence* is defined as "an ability to sustain the coordinated deployment of assets in a way that helps a firm achieve its goals" (Sanchez et al., 1996), therefore, an alliance competence is connected with partners resources as well as partners capability of using these resources in attaining their strategic goals. Lambe, Spekman, and Hunt (2000), Lado, Boyd, and Wright (1992) argue that competencies, developed within an alliance are defined by the deployment of a lower-order resources, namely

alliance experience, alliance manager development capability, and partner vigilance capability. Alliance experience in this regards, is an important factor that needs to be considered by partners as it develops through time and helps alliance partners extract the most from the relationship Lambe, Spekman, and Hunt (2000). However, the alliance potential could not be fully realized without proper management that fosters alliance development though the employment of the complementary resources, so they generate desirable synergies. Lastly, partners should be able to identify potential resource complementarities and spot potential synergies in order to exploit complementary resources in the most beneficial and advantageous way (Hunt, 1997).

Moreover, the importance of internal and external relational factors (e.g., relationships with suppliers, customers, employees) for the alliance success cannot be underestimated. The impact of relational factors on strategic alliance success are regarded in the frame of *relational factors view*. Therefore, the quality of relationships in the alliance social network define whether an alliance is going to be successful or not. Dwyer, Schurr and Oh (1987) argue that alliance development and evolution greatly depend on the on-going relationships an alliance is a part of. Therefore, such organizational factors as trust (Achrol, 1991; Wilson, 1995), commitment (Moorman, Zaltman, and Deshpande, 1992), cooperation (Anderson and Narus, 1990), are regarded as antecedents of alliance success according to relational factors view.

Looking at the alliance success from the *competitive advantage theory* viewpoint, an alliance can only be successful if it provides partners a feasible opportunity to gain an advantage over the competition (Porter, 1985; Hunt, Morgan, 1995; Hunt, Lambe and Wittmann, 2002; Hunt, Arnett, 2003), otherwise there will be no need for partners to enter into an alliance and to remain in the alliance, therefore, it will be terminated. It is important to note that competitive advantage theory provides a dynamic view on SA success as firms have to maintain and improve their competitive position constantly in order not only to constantly perform better than competition (Jiang, Li and Gao, 2008).

While all the above mentioned approaches mostly concentrate on the way companies exploit their resources reaching a competitive position in the market, *TCE* mainly focuses on transaction costs management. According to TCE, to be successful, alliances should establish and foster conditions that will decrease the costs of transactions within an alliance considering opportunistic tendencies that naturally exist in the context of alliances (Williamson, 1975, 1985; Das, Rahman, 2010). According to Williamson (1985), opportunism is “the incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse”. As strategic alliances involve two or more partners, whose individual strategic objectives should be aligned in order to reached, it is not surprising that partners’ are

prone to behaving opportunistically in order to reach their own objectives over the objectives of other parties (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013). Therefore, a successful alliance is able to be managed through establishing appropriate governance structures (Hennart 1988; Pisano and Teece 1989; Williamson 1991; Das, Rahman, 2010). An example of governance mechanisms in alliances might include alliance-specific investments, mutual hostages, equity involvement, etc. (Das, Rahman, 2010; Parkhe, 1993; Brown, Dev, Lee, 2000). In the context of a complex environment alliance operates in and high uncertainty, partners might lose trust in each other and deviate from the agreed or implied behavior that is not explicitly stated in the contract (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013).

Lastly, one of the latest theories that can be used to explain alliance stability and success is resource-advantage (R-A) theory, introduced by Hunt (2000) and Hunt and Morgan (1995, 1996, 1997). A distinct quality of the R-A approach is that it considers dynamic perspective of competition and firm behavior (Hunt, Arnett, 2003), and that is an integrative approach that incorporates the abovementioned perspectives (Hunt, 2000; Hunt, Arnett, 2003; Hunt, Lambe and Wittmann, 2002). Moreover, apart from being process-based, it builds upon and used in multiple disciplines: marketing (Hunt and Arnett, 2001; Hunt, Lambe and Wittmann, 2002), management (Hunt, 1995, 2000; Hunt and Lambe, 2000), economics (Hunt, 2000, 2001), general business (Hunt and Duhan, 2001), and ethics (Arnett and Hunt, 2002).

A few more words should be said about resource-advantage theory as it integrates multiple theories in one and seems to be one of the most. Originally, the theory was developed as a theory of competition, which is based on several traditions and theories, as mentioned above. Therefore, R-A theory can be called an embedded theory of competition because it considers not only economic reasoning behind firms' behavior, but also social impacts (Hunt, Arnett, 2003). According to R-A theory, firms seek for advantages in resources and capabilities in order to outperform competitors and attain over-the-average financial results compared to other companies to finally gain market superiority, therefore, enforcing a dynamic view of competition, which reflects reality to a large extent (Hunt and Arnett, 2001). Following R-A theory logic, firms are limited by the restricted access to relevant information, principal-agent problem that exists between firms and managers and ethical expectations posed on a firm (Hunt, Lambe and Wittmann, 2002). Therefore, firms in real world do not seek to maximize their profits, but rather perform better than some referent, e.g., another company or itself in previous periods.

As R-A theory explains firms' behavior in the economy, it is also applied to the field of strategic alliances (Hunt, Lambe and Wittmann, 2002). In application to SA success factors, R-A theory focuses on resources alliances need in order to achieve success and outperform the

“referent” (e.g., other possible alliance forms that are available for partners, other alliances in the market, other firms, etc.) and is suitable for explaining alliance cooperation and success. According to R-A approach, ***resources*** are defined as “tangible and intangible entities available to the firm that enable it to produce efficiently and/or effectively a market offering that has value for some market segment(s)” (Hunt, Lambe and Wittmann, 2002).

By explaining SA success in the light of R-A theory, Hunt, Lambe and Wittmann (2002) highlight the influence of the *RBV* approach on the development of the R-A theory. Given that R-A theory relies upon RBV in explaining alliance success, it stresses the role of firms’ resources in attaining alliance success. R-A theory argues that complementary and idiosyncratic resources constitute an important part of the alliance success explanation because it helps understand the nature of a competition an alliance is involved in (Lambe, Spekman and Hunt, 2002). Next, R-A theory views competences as a combination of lower-order resources, a combination of which leads an alliance to success. Relationship network that an alliance exists in has also become an important part of an integrative resource-advantage approach. Therefore, an alliance is not torn out from the social context, but is rather regarded in close connection with personal and organizational interrelationships that exist between individuals within and outside the organizations. Lastly, partner resources in an alliance should match the way they create synergies and provide partners with benefits that cannot be attained by firms individually (Hunt 2000).

To summarize this sub-chapter, R-A theory provides an integrative framework to SA success as it builds upon multiple traditional theories and approaches to the success of strategic alliances. One of the most important advantages of the R-A theory in application to SA success is its dynamic view on alliance performance, therefore, judging from this perspective, factors of alliance success that are studied within R-A theory are related to the dynamic nature of alliance operations.

1.3 Strategic alliance stability in academic literature

Despite all the advantages that strategic alliances can bring to partner companies, alliance involvement might incur issue for individual firms in an alliance (Kolenak, 2007). It is not uncommon that these issues within an alliance lead to the lack of stability, deteriorated performance and can cause alliance premature termination (Geringer and Hebert, 1991; Umukoroa, Sulaimonb, Kuyeb, 2009). Managing an alliance in a way that promotes cooperation between partners and decreases opportunistic behavior becomes highly relevant when firms enter alliances. Hence, strategic alliance stability is an important concept in relation to strategic alliances.

The first milestone study related to strategic alliance stability was published in 1971 by Franko, in which the author discussed the issue of strategic alliance stability as an opposite of SA instability. Therefore, the paper examines strategic alliance instability, particularly, the instability of joint ventures (JVs) in an international context. A brief summary of results of this study can be found in Table 1.4. Nevertheless, after the first publication by Franko (1971), instability issue did not attract enough attention from researchers until late 80's – early 90's (Fu, Lin, Sun, 2013). Later on, SAS has been studied in multiple papers, however, there are still a lot of issues with SAS definition, therefore, measurement (Jiang, Li and Gao, 2008). Oftentimes, strategic alliance stability is not clearly defined in academic papers (Jiang, Li and Gao, 2008), and often defined as an opposite to instability (Sim, Ali, 2000). Based on the literature review, a list of SAS definitions was created (see Table 1.2).

In fact, the focus of researchers on strategic alliance stability has been split between two general concepts: *strategic alliance stability* and *strategic alliance instability* (Jiang, Li and Gao, 2008). It appears that strategic alliance instability rather than strategic alliance stability was the first and dominant focus of numerous studies (e.g., Franko, 1971; Killing, 1982, 1983; Gomes-Casseres, 1987; Inkpen and Beamish, 1997; Yan and Zeng, 1999; Das and Teng, 2000; Gill and Butler, 2003; Nakamura, 2005), as it has been mentioned above. As a result, it is quite often when authors do not conceptually differentiate between SA stability and instability, and sometimes switch between the two in one study (e.g., Yan, 1998; Yan and Zeng, 1999).

Speaking of instability, it is conceptualized in terms of an outcome as a "termination, death or failure" of an alliance (e.g., Franko, 1971; Killing, 1983; Kogut, 1989). However, among all the cases of alliance termination, there are strategic alliances that end up their existence by achieving their strategic goals or by terminating the collaborative agreement naturally, according to the plan (Inkpen and Beamish, 1997; Hong, Yu, Zhichao, 2011; Jiang, Li and Gao, 2008). In these cases, strategic alliances should not be characterized as unstable (Jiang, Li, Gao, 2008; Hong, Yu, Zhichao, 2011). Christoffersen (2013) puts forward an example of a situation when partners sell out an alliance. Theoretically, this can happen if partners are dissatisfied with alliance performance, however, it is more likely to reflect the opposite – a stable and well-performing alliance is viewed as a more attractive acquisition target, therefore, it can be sold out more easily. Christoffersen (2013) insists that many alliances are formed as temporal entities that are meant for sale, so their sell-off should not be viewed as poor performance or instability (Bowman and Hurry 1993; Kogut 1991).

Moreover, in cases when studies report high failure rates, it is uncommon that sufficient explanation is provided to why strategic alliances get terminated after multiple years of successful

and stable performance (Yan, 1998). Continuing this line of logic, some studies report that after controlling for size and age of strategic alliances in a form of JVs, their failure rate is very close to that of wholly-owned subsidiaries (WOS) (e.g., Hennart et al, 1998; Delios and Beamish, 2004). Hence, the termination of a strategic alliance cannot always be viewed as an indicator of SA instability, and does not shed light on SA dissolution in particular (Jiang, Li and Gao, 2008).

Deitz et.al. (2010) in their empirical research argue that SAS should be viewed as one of the strategic alliance outcomes, stressing the dynamic aspect of it. Authors focus on SAS defining it as "the frequency of changes in contract or relationship status" consistent with (Inkpen and Beamish, 1997). Moreover, authors view commitment, or cooperative intent, as another crucial outcome SAs, particularly, for JVs. Partners' commitment, which implies that partners would rather demonstrate cooperative than opportunistic behavior (Das and Teng, 1998), represents a managerial trade-off for alliance partners as they should not only consider their own perspective in an alliance, but also consider other partners' perspective in order to make an alliance a success and not dissolve prematurely (Deitz et al, 2010).

Overall, it can be argued that academic literature on strategic alliance stability in particular is less abundant compared to the number of studies on the instability issue (e.g., Kogut, 1989; Beamish and Inkpen, 1995; Sim and Ali, 2000; Bidault and Salgado, 2001; Ernst and Bamford, 2005).

Finally, as a result of absence of one common strategic alliance stability definition, there is no clear vision on how strategic alliance stability should be measured.

Table 1.2. Definitions of strategic alliance stability/instability

Academic paper	Definition
(Zenkevich, Koroleva, Mamedova, 2014a)	"Strategic alliance *stability* should be understood as a success of alliance performance during the period of alliance operations under conditions of constant motivation of each partner firm to maximize the results of cooperation."
(Jiang, Li, Gao, 2008)	"…we define alliance *stability* as the degree to which an alliance can run and develop successfully based on an effective collaborative relationship shared by all partners."
(Huang, 2003) (Hong, Yu, Zhichao, 2011)	"*Stability*, means in the process of movement, or interference, whether or not the system can keep its former state. As for the specific strategic alliance, it means that the strategic alliance, as an organization can keep its stable state, it is a dynamic stability, relative stability."
(Inkpen, Beamish, 1997) (Das, Teng, 2000) (Sim, Ali, 2000)	"…joint venture is considered *unstable* if the partners' equity holding in the joint venture changed (including take-over by one partner) since the formation or the venture is terminated. Termination as a result of a project ending was not included."
(Qing, Zhang, 2015)	"…*instability* of such an [a competitive] alliance means short and fragile cooperation, and the failure of alliance"

Source: augmented from (Zenkevich, Koroleva, Mamedova, 2014a)

As it can be concluded from the Table 1.2 above, many scholars connect strategic alliance stability with its longevity and survival, absence of structural changes and reorganizations (Beamish, 1984, 1988), etc. (Sim and Ali, 2000; Franko, 1971; Killing, 1983; Blogget, 1992). Sometimes strategic alliance stability is regarded as a strategic alliance performance measure (Jiang, Li and Gao, 2008). Nevertheless, while SAS is oftentimes regarded as an indicator and measure of SA performance (Geringer and Hebert 1991), it is less widely used compared to other ones (e.g., financial results, partner satisfaction with alliance results) (Sim, Ali, 2000). Despite the fact that many approaches to strategic alliances exist, they are not mutually exclusive in nature. These different approaches rather complement each other, and their existence proves the multi-sidedness and complexity of strategic alliance stability nature (Varadarajan, Jayachandran, 1999; Jiang, Li and Gao, 2008; Yeung, Petrosyan, 2006).

Apart from the issues related to SAS definition and conceptualization, researchers tend to focus on a particular type of a strategic alliance, e.g., JV or international JV (IJV) (Jiang, Li and

Gao, 2008). Summarizing on the particular issue of IJV stability, Sim and Ali (2000) have created a short list of most important studies on this issue (see Table 1.2).

To summarize the approaches to SAS definition, the following scheme can be put forward (see Table 1.3). Overall, it can be concluded that there is a lack of studies that view strategic alliance stability as a dynamic concept, from a process-oriented perspective. However, the need to view strategic alliance stability as a dynamic concept is widely acknowledged in the current academic literature.

Table 1.3. Instability and stability, process-based and outcome-based researches examples

	Instability	**Stability**
Process-oriented	Killing, 1982, 1983 Yan, Zheng, 1999 Kogut, 1989 Sim, Ali, 2000	Jiang, Li and Gao, 2008 Zenkevich, Koroleva, Mamedova, 2014a,b Qing, Zhang, 2015
Outcome-oriented	Das, Teng, 2000 Lu, Beamish, 2006 Qing, Zhang, 2015	N/A

Table 1.4 provides a brief description of major empirical studies on strategic alliance stability, according to (Sim, Ali, 2000). As can be seen from Table 1.4, many studies dedicated to IJV stability in particular study it as an opposite to instability, applying outcome-oriented approach. Based on the summary presented in the Table 1.4, it can be concluded that during the XX century, apart from the issue of stability being studied as an opposite to instability, the following factors were considered to be causing instability: partners' conflicts (Franko, 1971), cultural distance (Franko, 1971; Park and Ungson, 1997; Barkema et al, 1996; Killing, 1983), opportunistism (Park and Ungson, 1997), role of management (Glaister and Buckley, 1998; Lee and Beamish, 1995), ownership structure (Blodgett, 1992), etc. However, it still seems inappropriate to study SAS through alliance termination or instability as it provides an outcome-oriented view on SAS, while it is more appropriate to consider the dynamics behind SAS (Jiang, Li and Gao, 2008; Zenkevich, Koroleva, Mamedova, 2014a,b; Qing, Zhang, 2015). Therefore, factors of "stability" examined in many researches in the past might be questioned as they refer not to stability, but rather to an instability issue.

Table 1.4. Empirical studies on IJV stability

Author	Measure of Stability	Sample Size	Stability Related Findings
Franko, 1971	Changes in equity level (50%; 95% cutoff; selling out; liquidation)	US MNEs (159) From Harvard MNE Database	Partners' conflict increases instability. Cultural differences have little impact. Strategy of global concentration and single product contribute to instability.
Killing, 1983	Liquidation and reorganization	37 IJVs in developed countries	Instability rate of 31% in all IJVs; 15% in dominant-controlled IJVs and 50% in shared management IJVs. Differences in national and corporate culture have some impact. Firm size and linkages with parents affect stability.
Beamish 1984, 1988	Equity changes, major reorganization	66 IJVs in developing countries	Instability rate of 5%. Higher instability rates for IJVs in developing countries than in developed countries.
Games-Casseres, 1987	Liquidation, conversion to wholly-owned ventures	US MNEs (180) from Harvard MNE Database	Instability rate for IJVs was 30.6% and for WOS 15.7%.
Harrigan, 1988	Survival, duration (No. of years in operation)	895 strategic alliances in 23 industries	Size asymmetries have little effect on IJV survival and duration. JV experience: negative impact on duration, but positive impact on survival. Vertical linkages: negative effect on survival. Horizontal linkages: no effect on survival and duration. Average IJV lifespan was 3.5 years.
Kogut, 1988	Ratio of terminated JVs to all JVs which survived	149 IJVs	Instability rate of 46.3%

Table 1.4. Continued

Kogut, 1989	Ratio of terminated from US JVs to all JVs which merger and survived	92 IJVs from US merger and acquisition database	Instability rate 43%, increased to 55% after one year and to 70% after 2 years. Ties (linkages) between partners contribute to stability (Horizontal linkages have positive effect. Vertical linkages have no effect). Industry growth and changes in industry concentration have positive effect on instability.
Geringer and Hebert, 1991	Changes in equity division survival	69 IJVs in US, 48 IJVs in Canada	Successful IJVs were more stable and survived longer. Stability measure has least correlation with subjective measure of IJV performance.
Blodgett, 1992	Changes in equity structure	1025 IJVs of 69 firms (Merger and Acquisitions Database)	Highly unequal ownership structure contribute to Instability (Dominant partnership destabilizes IJV). Restrictive host government polices contribute to IJV stability.
Beamish and Inkpen, 1995	Unplanned equity changes and major reorganization	Toppan Moore case study, 5 longitudinal studies, and 40 US-Japanese IJVs	Instability increases if foreign partner attaches a high value to the acquisition of local knowledge.
Lee and Beamish, 1995	Unplanned equity changes and major reorganizations	31 Korean IJVs in LDCs	Instability rate of 19% (low). Higher stability rates for IJVs formed with local private partners than with local Government partners.

Table 1.4. Continued

Barkema et al, 1996	Survival in terms of longevity (No. of years)	225 foreign ventures of 13 Dutch firms (1996-1988)	Longevity of foreign ventures is negatively related to cultural distance. Cultural distance has a greater negative impact on longevity of JVs than for WOS.
Barkema and Vermeulen, 1997	Survival in terms of longevity (No. of years)	828 foreign ventures of 25 Dutch firms in 72 countries (1961-1994).	Different dimensions of cultural distance have differential impact on JV survival. Uncertainty avoidance and long-term orientation have higher negative effect on JV survival than masculinity. Power distance and individualism have no effect.
Park and Ungson, 1997	Dissolution in terms of liquidation and sale to a third party	186 U.S. IJVs in electronics	Cultural distance in general has no effect on dissolution. US-Japanese IJVs last longer than US-US IJVs. Opportunistic threats and rivalry enhance dissolution.
Glaister and Buckley, 1998	Survival and duration	51 UK JVs	Nature of management control did not vary with duration of JV.
Hennart, Kim and Zeng, 1998	Terminations in terms of liquidation and selloff	355 Japanese stakes in US	30% termination rate. Factors selloff different from those in liquidation.

Source: (Sim, Ali, 2000)

Strategic alliance stability and economic performance. The discussion on SAS definition leads to an important point on alliance economic performance in line with connection to strategic alliance stability. Mainly, there are two opinions that exist: strategic alliance stability is an economic performance determinant, or economic performance is a determinant of strategic alliance stability.

For example, Fu, Lin, Sun (2013) view strategic alliance performance as an antecedent of strategic alliance stability, and find a positive association between strategic alliance performance and strategic alliance stability as a result of their empirical study. Authors claim that economic

performance is in a core of any strategic alliance, thus, any alliance that does not meet economic performance requirements, should eventually be terminated. Moreover, the authors argue that participants "inclination to withdraw" resources from the alliance should be reduced in the light of performance that meets their expectations and requirements and complemented by participants motivation to positively contribute to joint cooperative actions with their partners (Ungson, 2001; Fu, Lin, Sun, 2013).

However, the most popular view on a relationship between strategic alliance stability and performance is that stability actually determines economic performance (Dussauge and Garrette, 1995; Beamish and Inkpen, 1995, Jiang, Li, Gao, 2008). Following the example of Sim and Ali (2000), Jiang, Li, Gao (2008), this study adopts the view that SAS is a critical factor to alliance economic success (Sim, Ali, 2000; Jiang, Li, Gao, 2008) and strategic goals achievement once the alliance is established (Bidault and Salgado, 2001).

1.4 Strategic alliance stability conceptualization

The discussion about approaches to strategic alliance stability nature and definitions inevitably leads to a conclusion that it is a multi-sided phenomenon in cooperative relationships. These different sides of strategic alliance stability differ as the motivation of partners to enter and to belong to a particular strategic alliance differs as well (Zenkevich, Koroleva, Mamedova, 2014a). At the same time, stability of cooperative relationships is well studied in game theory (e.g., Moor, 1971; Zenkevich, Petrosyan, Yang, 2009). Based on previous studies of cooperative relationships stability in game theory (Moor, 1971; Zenkevich, Petrosyan, Yang, 2009; Gill, Butler, 2003; Wong, Tjosvold, Zhang, 2005; Kumar, 2011), Zenkevich, Koroleva, Mamedova (2014a, b) introduce several components of strategic alliance stability.

According to Zenkevich, Koroleva, Mamedova (2014a), strategic alliance stability has two levels. On the first level, there is external and internal, or cooperative, stability. On the second level, internal, or cooperative stability of strategic alliances, is comprised of motivational, strategic and dynamic stability (Zenkevich, Koroleva, Mamedova, 2014a, b). The overall stability scheme is presented in the Figure 1.1.

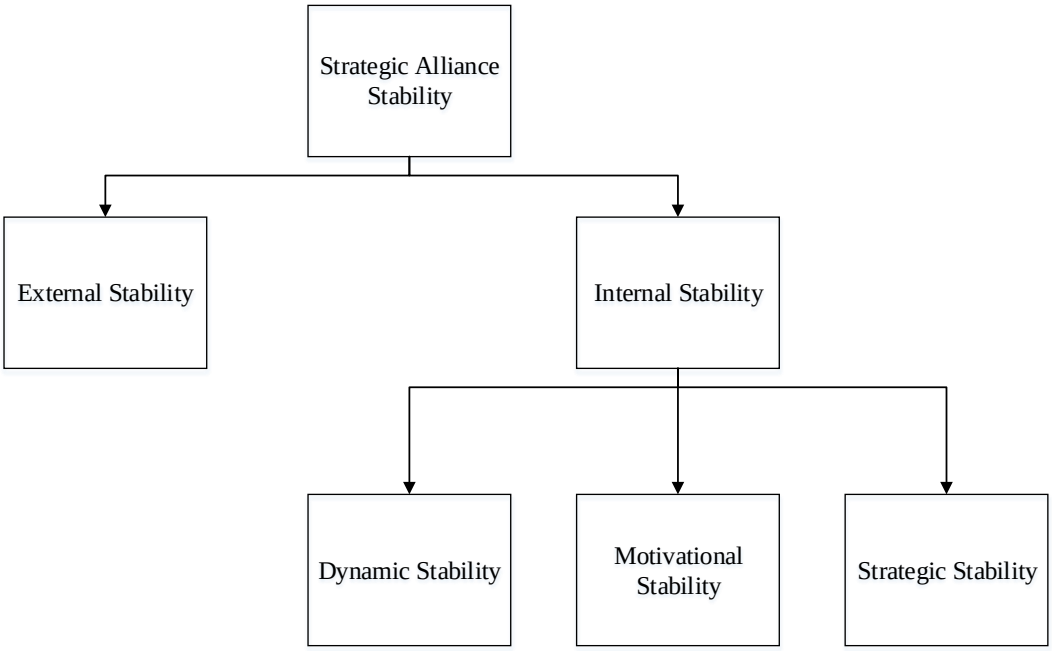

Figure 1.1. Strategic alliance stability structure

*Source: (*Zenkevich, Koroleva, Mamedova, *2014a)*

The concept of ***external stability*** allows to assess the stability of alliance as of a separate economic entity as it is conventionally done, with the help of economic indicators. It is assumed that a strategic alliance is externally stable in case its economic results show a raising trend. Economic results of the strategic alliance might include its net profit, revenue, market share, etc. If the trend is long-term, partner companies perceive a strategic alliance as a successful one, so they have a lasting motivation to maintain cooperation. It is important to consider the long-term trend because in a short-term perspective strategic alliance might experience losses (e.g., due to initial stages of alliance implementation, unfavorable external conditions, etc.), which will be perceived as "natural" and will not deteriorate participants cooperative intent, at least, to a significant extent in case the long-term trend is positive.

However, as a strategic alliance is an agreement between companies which are eager to attain their own objectives within the alliance, this explains the need of introduction of internal (or cooperative) stability concept, which is well studied in game theory.

Internal stability of companies is well describes in numerous papers in the field of strategic management (e.g., Gill, Butler, 2003; Wong, Tjosvold, Zhang, 2005; Kumar, 2011), while game theory has thoroughly studied different components of internal stability of cooperative relationships, and has developed a holistic approach for its assessment (Zenkevich, Petrosyan, Yang, 2009).

An important assumption for internal stability conceptualization is that partners in a strategic alliance are rational, this is why they enter a strategic alliance expecting that the benefits of their cooperation will exceed possible benefits of their actions in case they kept operating individually (Zenkevich, Koroleva, Mamedova, 2014a, Qing, Zhang, 2015).

Motivation to cooperate is essential to strategic alliance stability. Zenkevich, Koroleva, Mamedova (2014a) in their paper explain that ***motivational stability*** means that *partners find it beneficial to actively contribute to alliance operations, or actively commit to alliance activities* (Kumar, Scheer, and Steenkamp, 1995) because such behavior will increase the overall benefits of the alliance, hence, individual benefits of each partner (Gulati, Khanna and Nohria 1994; Sarkar et al, 2001). Such definition of a strategic alliance stability is close to the understanding of commitment introduces by Das and Teng (1998) and described above.

The importance of motivational stability is explained by the fact that success of alliance operations is defined not only by economic factors and their trends, but also by relationships among alliance participants (Deitz et al., 2010; Hunt, Lambe and Wittmann, 2002). Motivation for further cooperation is supported by such factors as trust (Anderson, Weitz, 1989; Huo, Ye, Zhao, 2015), attention to cross-cultural differences (Doz, Hamel, 1998; Yan, Luo, 2001) as well as common goals and objectives (Anderson, Weitz, 1989; Ozorhon et.al., 2008) and participants' commitment (Kumar, Scheer, and Steenkamp, 1995). One can say that alliance partners are committed to the alliance in case he contributes resources and capabilities necessary for alliance success (Jiang, Li and Gao, 2008). Partners' commitment has a positive influence on partners' relationship because it indicates are loyal and long-term oriented while increasing reciprocity and cooperation levels. Given these conditions, partners can expect that they are able to receive the expected benefits during the time an alliance functions. (Zaheer, Venkatraman, 1995). If partners are committed to the relationship, they are less likely to deviate from cooperation. On a contrary, when partners are not committed to the alliance, they are not likely to establish a close cooperation with each other, which destabilizes the relationship.

Strategic stability is well studied in game theory (Zenkevich, 2009). Assuming that partners entering a strategic alliance are rational, when partners make a decision to form a strategic alliance, it means that they *find such form of collaboration to be the most beneficial for them compared to all other opportunities in the market, including other partnerships and an opportunity to operate alone*. However, when the strategic alliance enters the implementation phase, circumstances or partners' access to information might change, etc., so one of the partners might reconsider staying within an alliance not beneficial anymore and want to exit the alliance. Strategic

stability of a strategic alliance assumes that none of the partners find it beneficial to decline from the cooperative agreement among partners, while other partners pertain to it.

Dynamic stability is examined in game theory along with strategic stability as a part of internal stability of cooperative relationships (Zenkevich, 2009). Dynamic stability of strategic alliances refers to benefits sharing in an alliance, or the payoff structure. Payoff structure is an important issue for alliance partners as they are motivated not only through economic benefits generated by an alliance as an economic entity, but also by benefits that are allocated to them personally (Umukoroa, Sulaimonb and Kuyeb, 2009).

It has been mentioned by Franko (1971) that an alliance is stable rather than unstable when partners agree to agree on the initial profit sharing mechanism and satisfied with it. At the stage of alliance formation, partners form an understanding of what kind of benefits and in what quantity they find to be fair for them in comparison with all the threats and possible disadvantages, such as opportunity costs, that they are likely to face due to alliance participation and all the inputs they have to make for cooperation. *The alliance is dynamically stable in case when at each moment of time the sum of gained and expected benefits by a partner corresponds to the amount and type of benefits the partner had been expecting to gain when signing the contract for cooperation.* Dynamic stability assumes that this principle is supported for each of the partners in a strategic alliance.

In case when a partner realizes that he will not be able to get all the expected benefits he had been expecting from the alliance, his motivation to continue alliance participation might decrease or even disappear (Zenkevich, Koroleva, Mamedova, 2014a). Therefore, a set of measures in terms of governance and communication have to be undertaken to manage partner satisfaction from the cooperation as well as perceived fairness of benefits sharing.

However, given that a well-developed pay-off structure is necessary for alliance success and stability (Khanna et al., 1998), it is not a sufficient condition for it (Agarwal, Croson, Mahoney, 2010).

Summarizing the abovementioned definitions of different stability components, ***strategic alliance stability*** can finally be defined as a *success of alliance performance during the period of alliance operations under conditions of constant motivation of each partner firm to maximize the results of cooperation* (Zenkevich, Koroleva, Mamedova, 2014a).

Strategic alliance stability components in the focus of the study. Certain connections can be made between strategic alliance stability components represented in the Figure 1.1 and existing papers. For example, papers like (Jiang, Li and Gao, 2008; Zenkevich, Koroleva, Mamedova,

2014a,b; Qing, Zhang, 2015) view strategic alliance stability as an outcome of strategic alliance activities and use it as a performance measure, which correlated with the way external stability is conceptualized. External stability can be observed in a presence of a growing trend in economic result. Hence, stability can be assessed as a series of alliance economic results as a dynamic concept

As it has been discussed in sub-chapter 1.3, another traditional approach to strategic alliance stability definition and assessment is connected to the SA longevity, premature termination, changes in organizational form, partner commitment, satisfaction, etc. (Kogut, 1989; Deitz et al, 2010; Christoffersen, 2013). Hence, the effects of motivational, dynamic, strategic stability are often considered, however, not structured and not articulated explicitly, being defined by a general term of "strategic alliance stability" (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) or "commitment" (Deitz et al, 2010). One common characteristic of these approaches to SAS definition, is that they focus on cooperation internal characteristics, that an outsider might have difficulties in assessing due to scarcity of information disclosed by strategic alliances (Jiang, Li and Gao, 2008).

For the purpose of this research, strategic alliance stability was analyzed as a multi-dimensional construct, however, the distinction among strategic alliance stability components was made on the most aggregate level: between *external* and *internal stability*. Given the fact that not much has been done in merging game theory approach to strategic alliance stability conceptualization, which is comprehensive and all-inclusive, and broader managerial studies that examine strategic alliance stability factors, the benefits of such SAS conceptualization within the study are clear. Fist, such an approach pertain concept integrity. Second, conceptualizing stability this way, there is an ability to identify differences in relationships between strategic alliance stability factors and different strategic alliance stability components on the most aggregate level to gain a general understanding about these interconnections. The third benefit is the feasibility of further empirical analysis given the number of constructs to be analyzed in one study.

1.5 Factors of strategic alliance stability: theoretical perspectives

Partner firms can increase cooperation by altering the factors that affect it (Umukoroa, Sulaimonb, Kuyeb, 2009), therefore, affect strategic alliance stability (Deitz et.al., 2010).

Pure economic view on partner cooperation and alliance success is believed to be incomplete and limiting (Mellat-Parast, Digman, 2007; Nielsen, 2007). It is argued by researchers (Lambe, Spekman and Hunt, 2002) that there are other factors that affect the extent to which cooperation is maintained. Speaking of inter-organizational factors (Zenkevich, Koroleva,

Mamedova, 2014a), not considering factors of the external environment, the groups of factors that affect alliance success are relational (e.g., trust) and non-relational (e.g., resource complementarity), strategic (e.g., goal congruence, resource complementarity) and relational, economic and non-economic (Lambe, Spekman and Hunt, 2002; Day, 1995; Ganesan, 1994; Hunt, 1997; Jap 1999; Morgan and Hunt, 1994; Varadarajan and Cunningham, 1995; Deitz et al, 2010).

Generally, studies on SAS either do not explicitly explain the rationale behind choosing particular factors in explaining SAS (Jiang, Li and Gao, 2008), study stability from a pure mathematical perspective (Qing, Zhang, 2015), apply a combination of theories, such as TCE and RBV (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013), or use R-A theory (Deitz et al, 2010) to define a set of SAS factors. Overall, in examining SAS empirically, it seems logical to refer to studies and models emerging from an integrative theory, such as R-A, or a combination of theories, e.g. TCE and RBV.

Deitz et.al. (2010) adopt the resource-advantage theory, and examine "strategic and relational factors" that affect alliance stability, particularly the stability of JVs, and ongoing commitment, which is conceptually similar to strategic and motivational stability in the adopted approach to SAS (Zenkevich, Koroleva, Mamedova, 2014a). Figure 1.2 depicts the conceptual model (Deitz et al, 2010) put for testing. In this study, authors do not only test the influence of resource complementarity and trust on alliance stability and cooperative intent (which correspond to strategic and motivational stability in the context of this study), but also moderating effects of alliance age and prior alliance experience.

In this paper, conducting the SEM on a sample of 219 observations, Deitz et al (2010) have found the significant influence of resource complementarity on both components of SAS. The same result was produced for the association between trust and JV stability, however, the association between trust and commitment appeared to be marginally significant.

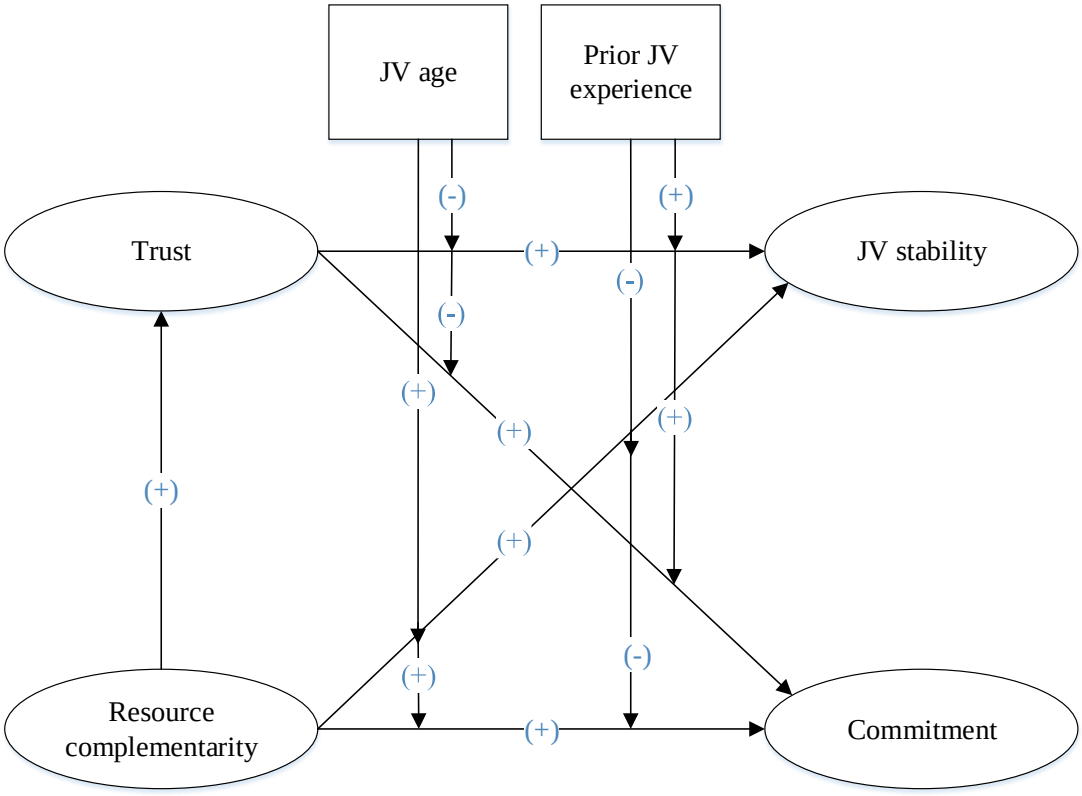

Figure 1.2. Effects of trust and resource complementarity on export JVs stability and partner commitment

Source: (Deitz et al, 2010)

A similar study, (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) extends the traditional resource-based view by adding a transaction-costs economy approach to explain international JV commitment. Such a way of combining the two approaches brings the approach close to the resource-advantage explanation because, as was mentioned previously, to partner cooperation in alliances, and build conceptual frameworks around partners' commitment to the relationship, defined as "the willingness of partners to invest in the JV the resources necessary for its success" (Gulati, Khanna and Nohria 1994; Sarkar et al. 2001), which, in turn, matches the concept of motivational stability. The authors of the paper come up with the following conceptual model (see Figure 1.3).

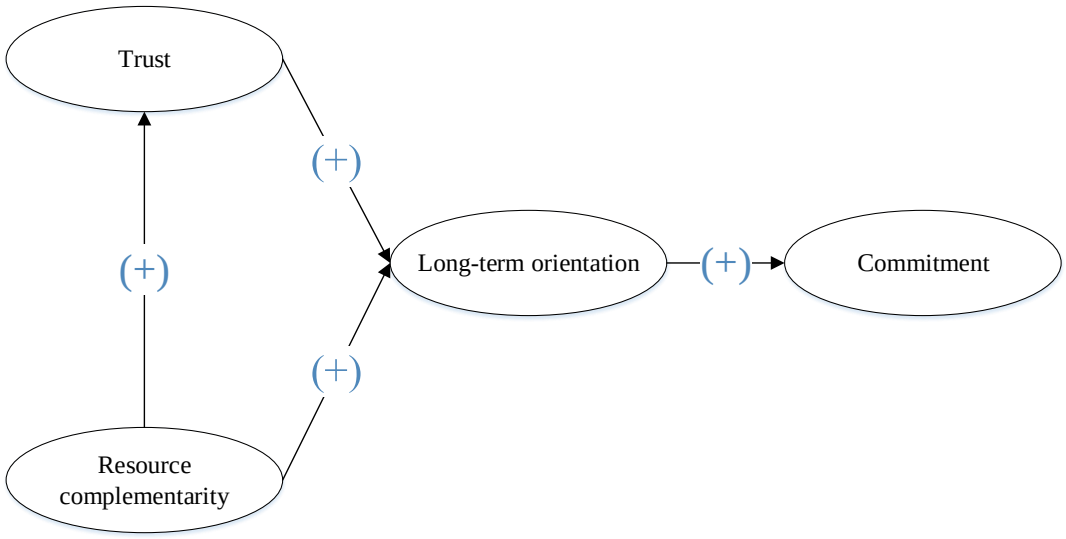

Figure 1.3. The impact of long-term orientation, resource complementarity and trust on commitment in IJVs

Source: (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013)

As a result of their empirical analysis, done with the help of PLS, on a sample of 85 Spanish JVs, authors find that all the structural relationships in the scheme represented by Figure 1.3, apart from Resource complementarity → Long-term orientation are positive and significant, while the denoted relationship is positive, but statistically insignificant. Therefore, the effect of resource complementarity of long-term orientation has been found to be indirect. However, as can be seen from the Figure 1.3, authors do not test the direct relationships neither between resource complementarity and commitment, nor between trust and commitment.

Given multiple combinations of factors that have a potential impact of SAS and on the alliance success overall (see sub-chapter 1.4), for the purpose of this study, the decision was made to focus on three determinants of SAS: trust, long-term orientation, resource complementarity, which were combined together in (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013; Deitz et al, 2010). Moreover, these factors of SAS correspond to R-A understanding of SA success, therefore, stability.

Trust can be conceptualized as "the willingness of one party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Mayer et al, 1995). Trust is believed to be an important factor for cooperation success (Das and Teng, 1998; Madhok, 1995) as trust enhances cooperation itself as well as lowers costs for coordinating activities, reduces uncertainties and facilitates information exchange among partners (Smith, Carroll and Ashford, 1995; Dyer, 1996; Gill and Butler, 2003; Deitz et al, 2010). Additionally, it has been

shown by Ganesan (1994), that in case when partners trust each other, they expect any possible losses to be mitigated in the future (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013). Besides, partners find it more comfortable to build long-term cooperative relationships with other partners whom they trust (Jiang, Li and Gao, 2008). Contrary to the presence of trust in partner relationships, in its absence, SAS is likely to disappear (Nielsen, 2007). Existing researches have defined the importance of mutual trust for maintaining stable relationships among partners (Jiang, Li and Gao, 2008; Anderson and Weitz, 1989). However, while the empirical evidence of trust influence on cooperation, there is lack of evidence of trust influence directly on economic results of the firm (Nielsen, 2007). The lack of evidence might be connected to the fact that trust is an intangible construct that is hard to measure (Nielsen, 2007). Nevertheless, an indirect positive impact on economic results might be assumed (Jap, 1999).

Strategic alliances are meant to be temporary (Das, Rahman, 2010), however, some of the alliances may last for a long time. Generally, as for the date of establishment, the term of an alliance can be determined or not determined. At the same time, partners' time-horizon orientation in an alliance matter. In case when partners are short-term oriented, the possibility of them behaving opportunistically increases and cooperation suffers (Das, Rahman, 2010). López-Navarro, Callarisa-Fiol, Moliner-Tena (2013) argue that partners' ***long-term orientation***, defined in terms of "attitude or vision of partners regarding the future benefits that the relationship can bring them" (Ryu, Park and Min 2007; Sheth and Parvatiyar, 1992) fosters cooperation and enhances alliance stability. Therefore, when partners are long-term oriented, they perceive their own economic results and the economic results of the partner as interconnected, and they have an aspiration that jointly partners are going to benefit from the cooperation in the long-run (Ganesan, 1994; Kelley and Thibaut, 1978).

Partners' long-term orientation towards benefits sharing cause partners' to be concerned about the relationships (Das and Teng, 2000; Ganesan, 1994; López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) and think of the "shadow of the future", which means that negative experience of one of the partners in a relationship can cause him to demonstrate negative relational tendencies in response to this experience, and vice versa (Das, Rahman, 2010). It is also assumed that short-term oriented partners are likely to maximize their short-term gains for every transaction within an alliance, therefore, would not consider partner's perspective. Lack of long-term orientation, as findings provided by (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) suggest, results in lack of partners' commitment and partner involvement in an alliance. Moreover, it is believed that long-term orientation enhances incentives alignment (Das, Rahman, 2010).

Resource complementarity is defined as the level to "which firms in an alliance are able to eliminate deficiencies in each other's portfolio of resources" (Lambe, Spekman and Hunt, 2002). The need for partners' complementary skills and resources represents a motivation for the formation of joint venture arrangements (Geringer, 1991; Hamel, 1991; Sim, Ali, 2000). Geringer (1991) in particular, found that need for partners' complementary resources (such as market knowledge, market access, local identity, and marketing channel) is the most important partner selection criterion. Firms with complementary resources, given that they cooperate, can increase the other's ability to attain business goals as they can provide their joint relationship with resources and capabilities, both tangible and intangible, that will create synergies with those of the other partner (Lambe, Spekman and Hunt, 2002). R-A theory implies that complementary resources of each of the partners are combined to create a unique set of resources and capabilities within an alliance to establish a competitive advantage over competitors (Hunt 1997; Hunt and Morgan, 1995, 1996, 1997; Jap, 1999). Summarizing on (Lambe, Spekman, and Hunt, 2000), resource complementarity can be called a necessary condition for alliance success, based on which distinctive alliance competences are developed.

However, not only resource complementarity affects partners' ongoing cooperation, but it is also considered by partners at a stage of choosing their partnership among available strategic options (Jiang, Li and Gao, 2008). Therefore, firms should pay a close attention to resource complementarity with their partners during the partner selection process and keep the notice of the degree of complementarity during alliance implementation stage.

1.6 Chapter 1 concluding remarks

One of the issues discussed in academic literature and among practitioners is strategic alliance stability. Strategic alliance stability is an important concept as it is assumed to be an important strategic alliance characteristic, or an outcome, being positively associated with strategic alliance performance (Sim, Ali, 2000; Jiang, Li, Gao, 2008).

Chapter 1 represents a literature review on strategic alliances, strategic alliance success and strategic alliance stability. In this chapter, several theoretical approaches to issue of strategic formation have been described, namely: resource-based theory, transaction cost economy, inter-organizational theory, market power concept, social capital approach, resource-advantage theory. A notion has to be made that regardless the theory used to explain strategic alliance formation, the primary objective of partners that enter a strategic alliance is the desire to gain economic benefits (Qing, Zhang, 2015). Finally, a *strategic alliances* was defined as a long-term cooperative agreement between partner companies that stay legally independent from each other after alliance

formation, share cooperation benefits and governance control over defined objectives and are continuously involved into one or more strategically important areas (Zenkevich, Koroleva, Mamedova, 2014a).

Following the logic of the Chapter 1, factors that affect strategic alliance success were analyzed from different theoretical perspectives: resource-based view, competence-based approach, relational factors view, competitive advantage theory, transaction cost economy, resource-advantage theory. Resource-advantage theory was identified to be the most all-inclusive and all-embracing theory that incorporates other theories and provides a realistic view on the success of strategic alliances as a dynamic and relative concept.

Next, strategic alliance stability was analyzed in relation to SA success. 3 main approaches to SAS definition were derived from the literature on SAS: outcome-based as an opposite to SA instability, process-based as an opposite to SA instability, process-based (dynamic) as strategic alliance stability itself (see Table 1.2). Overall, it can be claimed that more recent studies rely on the process-based stability definition, defining it as a self-sufficient concept rather than through instability.

As a next step, strategic alliance stability was conceptualized considering game theory approach, which seems to be the most all-inclusive. From the viewpoint of game theory, strategic alliance stability consists of 2 components on a general level: external and internal stability. Internal stability, in turn, consists of 3 components: dynamic, strategic and motivational stability. In order for an alliance to be stable, it is important that all the components are present. Hence, *strategic alliance stability* is defined as a success of alliance performance during the period of alliance operations under conditions of constant motivation of each partner firm to maximize the results of cooperation (Zenkevich, Koroleva, Mamedova, 2014a).

Lastly, guided by R-A theory and recent empirical studies by Deitz et.al. (2010), López-Navarro, Callarisa-Fiol and Moliner-Tena (2013), strategic alliance stability factors were introduced for further consideration, namely: long-term organization, trust, resource complementarity.

CHAPTER 2. STRATEGIC ALLIANCE STABILITY FACTORS HYPOTHESES DEVELOPMENT AND METHODOLOGY

2.1 Strategic alliance stability factors and hypotheses

Cooperation between firms should be understood from various perspectives. However, oftentimes hard data available for analysis of an alliance does not always represent a full picture of alliance's state, and does not allow drawing conclusions on such concepts as "trust, forbearance, reciprocity and opportunism" (Christoffersen, 2013), which are important for understanding strategic alliance stability (Zenkevich, Koroleva, Mamedova, 2014a,b; Jiang, Li and Gao, 2008).

Establishing and managing a strategic alliance requires sufficient resources of participants, including their cooperative effort, time and financial resources. Apart from a great cost, some of investments made in an alliance are specific and non-recoverable (Parkhe, 1993; Brown, Dev, Lee, 2000; Lambe, Spekman and Hunt, 2002; Das, Rahman, 2010), which means they cannot be easily employed outside the alliance. For this reason, it is crucial to understand stabilizing and destabilizing forces in alliances, so it is possible to prevent alliance instability and manage stability in a systematic way (Jiang, Li and Gao, 2008).

As Jiang, Li and Gao (2008) and Zenkevich, Koroleva, Mamedova (2014a) mention, one of peculiarities of multiple studies (Kogut, 1988, 1989; Deitz et al, 2010; López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) is that an explanation of stability is made for a specific alliance type, which limits the implementation of findings to a specific alliance type (e.g., joint ventures, buyer-supplier agreements). However, this paper considers strategic alliances in a broader sense (see sub-chapter 1.4 for the definition).

As for the factors of strategic alliance stability, they are chosen on a basis of R-A theory, as it seems to be the most comprehensive and dynamic approach (see sub-chapter 1.2), which corresponds to the principles of game theory that views SAS as a dynamic and multi-sided concept (see chapter 1.4). In particular, papers (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013; Deitz et al, 2010) were considered in respect to SAS factors as these are recent studies examining a particular issue of SAS. The paper by Zenkevich, Koroleva, Mamedova (2014a) was considered for SAS conceptualization. SAS factors considered in the paper: long-term orientation, trust, resource complementarity. SAS components: internal and external stability.

Long-term orientation. Studies show that the longer the "shadow of the future", the less likely it is that partners are going to engage into opportunistic activities because the consequences such behavior might have are to be considered by them (Axelrod, 1984; Heide and Miner, 1992; Das, Rahman, 2010). In turn, long-term orientation increases the shadow of the future, making

partners dependent on each others' behavior, and their cooperation more vigorous (Das, Rahman, 2010).

Moreover, in case partners are long-term oriented, they stay committed to the alliance even in case of temporary inequalities between them as they believe that all the inequalities will even out in the long-run (Das, Rahman, 2010), therefore, partners will expect to at least be able to gain the amount of benefits indicated by the alliance contract. Long-term orientation of partners also decreases the urge, or the pressure, of gaining quick results. The importance of the absence of pressure for quick results is especially important for strategic alliances as it is rare when it is possible for them to start generation positive economic outcome right after establishment (Das, Rahman, 2010; Zenkevich, Koroleva, Mamedova, 2014a). If the alliance horizon is set to be long, partners are going to be willing to commit to the relationship and make efforts to preserve it (Ring and Van de Ven, 1994).

As follows from the definition of external SAS, an alliance has to demonstrate an increasing long-term trend in its economic results to be externally stable (Zenkevich, Koroleva, Mamedova, 2014a,b). In case partners are long-term oriented, they are likely to believe in the alliance perspective (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) and, contrary to the short-term orientation, will not be likely to behave opportunistically, which would have a detrimental effect on alliance economic results of an alliance (Das, Rahman, 2010). Overall, long-term motivation appears to be important for both internal and external stability of SAs (Zenkevich, Koroleva, Mamedova, 2014a).

The following hypotheses are put forward:

H1: Long-term orientation is positively associated with external stability of a strategic alliance
H2: Long-term orientation is positively associated with internal stability of a strategic alliance

Trust. Trust in partner relationships decreases uncertainties, therefore, positively affects conflict resolution and enhances cooperation (Granovetter, 1985; Madhok, 1995; Deitz et al, 2010). Stemming from the TCE approach, and incorporated into R-A theory, trust reduces transaction costs by developing a desirable transaction climate (Granovetter, 1985; Madhok, 1995; Huo, Ye, Zhao, 2015). Without mutual trust, partners would be likely to behave opportunistically by taking advantage of doubtful situations, not explicitly defined by the contract (Williamson, 1985), which would affect the cooperation between partners, in particular (Das, Rahman, 2010), perceived payoff equality and fairness along with partners' willingness to stay within an alliance and commit to it. It has also been claimed by scholars that trust has an impact on the degree to which partners are long-term oriented as even during the hard times for an alliance, partners would

believe that short-term losses would be compensated by long-term gains (Ganesan, 1994; Lee and Dawes, 2005; Ryu, Park and Min, 2007; Yu and Pysarchik, 2002; Zhao and Cavusgil, 2006; López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013; Jiang, Li, Gao, 2008).

However, the association between trust and alliance success in terms of alliance economic performance is not clearly articulated in the literature. It is argued by Nielsen (2007) that trust has rather an indirect impact on economic results of an alliance, therefore, on a sequence of economic results in time as well.

The following hypotheses are put forward:

H3: Trust is positively associated with internal stability of a strategic alliance

H4: Trust is positively associated with long-term orientation in a strategic alliance

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Resource complementarity. Resource complementarity is believed to be a crucial, corner stone element to reach and maintain SAS (Deitz et al, 2010). Deitz et al. (2010) underline that partners with complementary resources are able to combine them in a unique way to attain a competitive advantage in the market through extracting value from valuable, rare, durable and inimitable resource combinations (Barney 1991, 1992). When the competitive level of complementarity is achieved, the probability that partners are willing to change the alliance form or to exit the alliance should decrease significantly (Deitz et al, 2010).

Partners with complementary resources are seen as mutually dependent (Geringer, 1988) as partners' resource contribution is beneficial for each party by definition. It has been shown in the study of Beamish (1988) that multinational companies are eager to find local partners with complementary resources while expanding their business abroad. On the other hand, Park and Ungson (1997) have shown that low resource complementarity is reflected in increased termination rates of alliances.

By recognizing that a partner supplies resources that complement firm's own ones, a firm also recognizes the original value of its partner for the alliance and the interdependence between partners. Therefore, in this sense resource complementarity leads to increased partners' trust and decrease opportunistic tendencies in a relationship (Morgan and Hunt, 1994; Sarkar, Echambadi, Cavusgil, and Aulakh, 2001). Furthermore, López-Navarro, Callarisa-Fiol & Moliner-Tena (2013) find that resource complementarity influences partner commitment through trust, not finding the support for a direct relationship.

Scholars have proposed and empirically tested the hypothesis that resource complementarity positively influences partner intentions to remain in the JV and cooperative

intent, respectively (Deitz et al, 2010; Jiang, Li and Gao, 2008), and Deitz et al (2010) found support for each case.

Not only resource complementarity is connected to partners' internal cooperation, but it also has been studied as an antecedent of a desirable economic performance due to synergies created among complementarity resources (Luo, 1999; Lambe, Spekman and Hunt, 2002; Nielsen, 2007).

The following hypotheses have been put forward:

H5:Resource complementarity is positively associated with external stability of a strategic alliance

H6: Resource complementarity is positively associated with internal stability of a strategic alliance

H7: Resource complementarity is positively associated with partners' trust

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External and internal stability. There is a rationale to assume that external stability, the proxy of which is an upward trend in alliance results (Zenkevich, Koroleva, Mamedova, 2014a, b), is positively associated with internal stability of a SA. As a primary reason of alliance formation is connected to economic benefits generation and gaining an expected financial return (Umukoroa, Sulaimonb and Kuyeb, 2009; Qing, Zhang, 2015), it is expected that economic results are considered by partners during the alliance implementation phase. Moreover, alliance success in the real world is evaluated by partners in comparison with some referent: either another company, industry, or itself at a different point of time (Hunt, Lambe and Wittmann, 2002). Therefore, partners continuously evaluate alliance performance and make their decisions on the future cooperation based on results of the assessment, deciding how to behave within an alliance, whether or not to stay in the alliance, maintain the same alliance form, etc. (Qing, Zhang, 2015).

Therefore, there is a reason to put the following hypothesis forward:

H8:External stability is positively associated with internal stability

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The conceptual model of strategic alliance is depicted in the Figure 2.1. Each arrow in the conceptual model represents a causal relationship and corresponds to a certain hypothesis. Overall, there are 8 hypotheses on the relationships between SAS factors and SAS components, the connection between SAS components, and the connections between SAS factors. Note that a sign (+) in the parenthesis stands for a positive association between constructs. Hypotheses for the model are summarized in a Table 2.1.

Table 2.1. Research hypotheses summary

H1: Long-term orientation is positively associated with external stability of a strategic alliance
H2: Long-term orientation is positively associated with internal stability of a strategic alliance
H3: Trust is positively associated with internal stability of a strategic alliance
H4: Trust is positively associated with long-term orientation in a strategic alliance
H5: Resource complementarity is positively associated with external stability of a strategic alliance
H6: Resource complementarity is positively associated with internal stability of a strategic alliance
H7: Resource complementarity is positively associated with partners' trust
H8: External stability is positively associated with internal stability

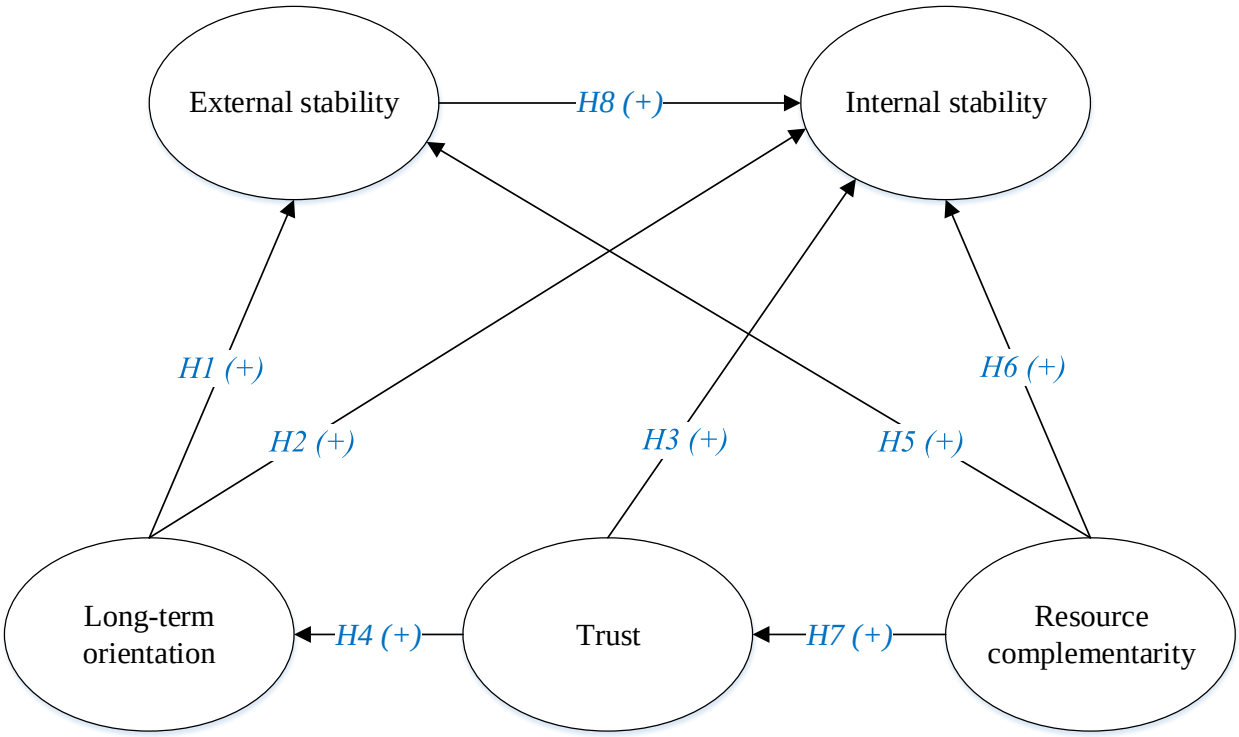


Figure 2.1 Conceptual model: strategic alliance stability factors

Source: Adapted from (Deitz et al, 2010; López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013)

Given the number of hypotheses and a complex set of interconnections that exist among constructs, it makes sense to increase model complexity gradually to test it. Hence, a deeper understanding of relationships, direct and indirect effects of SAS factors on SAS components might be obtained.

Therefore, the first model to be tested in the following Chapter 3 incorporates only direct relationships between SAS factors and SAS components (see Figure 2.2), which are presented by hypotheses H1, H2, H3, H5, H6.

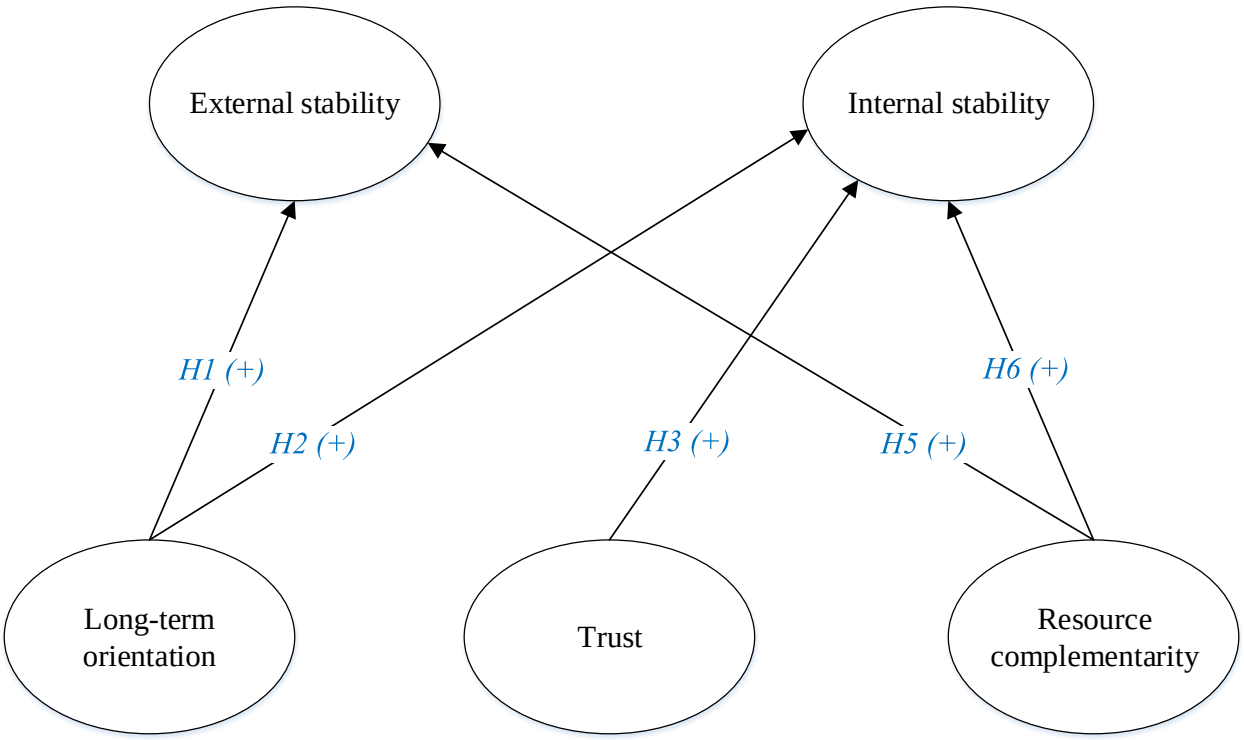


Figure 2.2. Hypotheses scheme (1) for empirical test

After the model in the Figure 2.2 is tested, a direct impact of SAS factors on SAS components can be determined. This differentiation needs to be made in order to define different types of direct and indirect effects. For example, the conceptual model in the Figure 2.1 implies that there is a number of mediators that might be present in the model. Mediator represents a (latent) variable intervening a direct relationship between dependent and independent (latent) variables (Kim, Kaye and Wright, 2001). In Figure 2.1, potential mediators are: *Trust* (for the relationship between *Resource complementarity* and *Internal stability*) and *External stability* (for the relationship between *Long-term orientation* and *Internal stability*). For the mediation effect to be proven, it is important that a direct relationship between dependent and independent construct is significant (Kim, Kaye and Wright, 2001; Hair, 2010), therefore, direct relationships between SAS factors and SAS components are tested first and other relationships are introduced one by one.

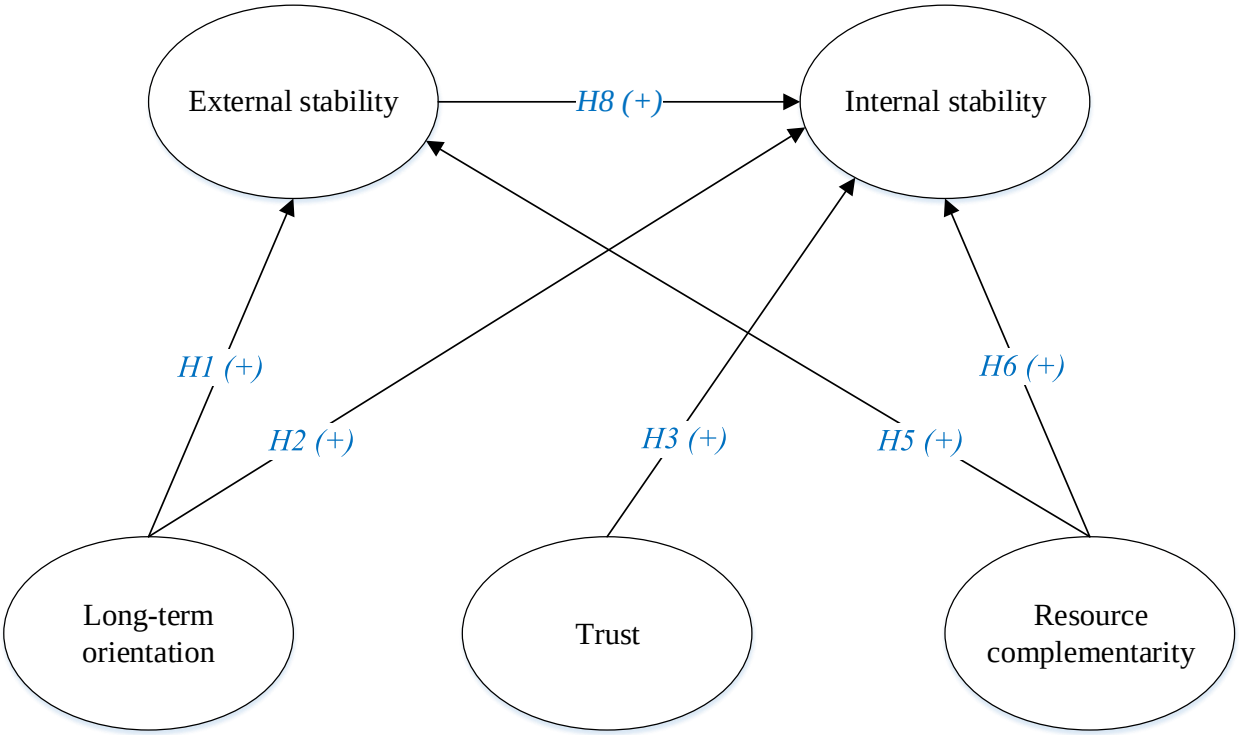


Figure 2.3. Hypotheses scheme (2) for empirical test

In the hypotheses scheme (Figure 2.3), a new hypotheses (H8) is added to the set of relationships, which allows to examine whether or not *External stability* is positively associated with *Internal stability*, therefore, also examining indirect effect between *Long-term orientation* and *Internal stability* as well.

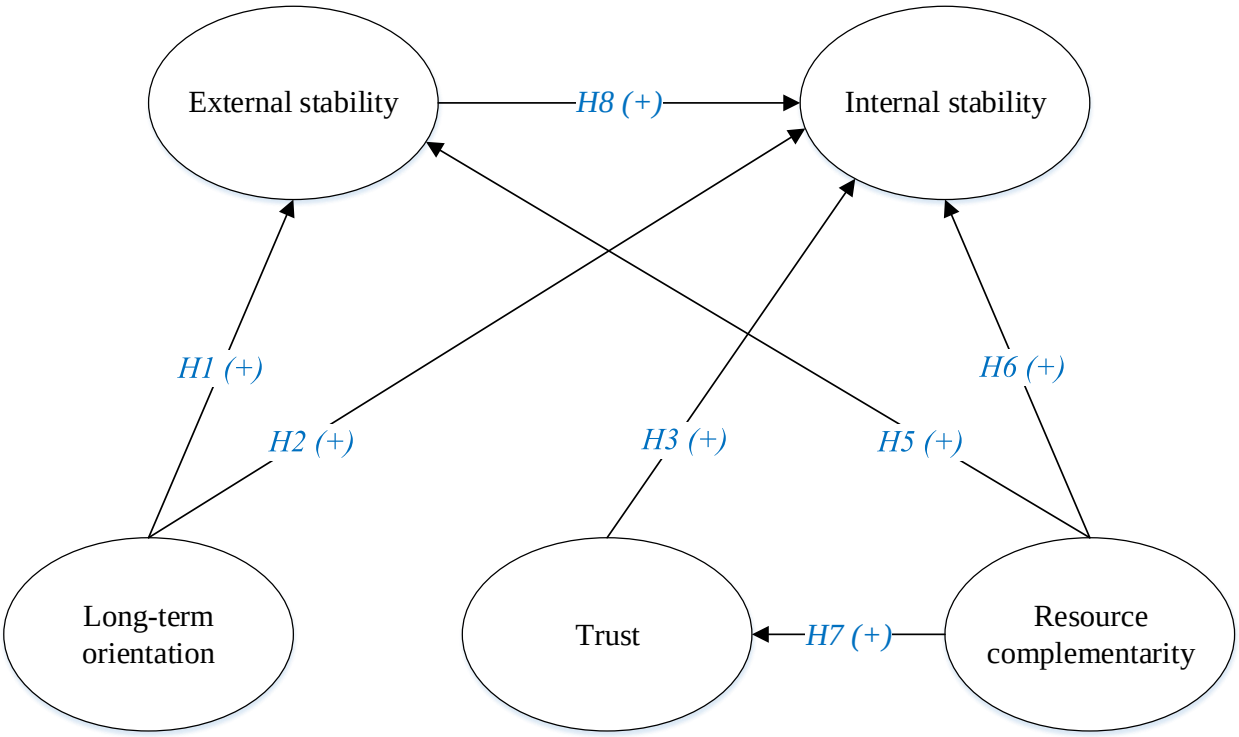


Figure 2.4. Hypotheses scheme (3) for empirical test

Figure 2.4 represents the next set of hypotheses to be tested empirically, it is the last modification of the conceptual model before the final version in the Figure 2.1. Comparing the model in a Figure 2.4 with a model in a Figure 2.3, an additional hypothesis H7 is introduced. By testing the model in Figure 2.4, it will be possible to make conclusions on whether or not *Trust* plays a mediator role for the relationship between *Resource complementarity* and *Internal stability*.

2.2 Data collection: resources and restrictions

In this research, primary data was collected from the web-based questionnaire sent out to European firms. Generally, collecting data from the questionnaire is very popular way to study the phenomena of SAS, which is done in multiple studies, e.g., (Nielsen, 2007; López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013; Deitz et al, 2010; Ozorhon et al, 2008). On the example of the same studies, it can be concluded that deductive approach is also a common approach applied across empirical papers on the topic as it allows to derive hypotheses from the literature that are empirically tested later on.

Following the deductive approach, hypotheses were formulated based on existing literature (see sub-chapter 2.1). Next, the questionnaire was constructed (see Appendix 2) and the survey conducted. Consequently, questions in the survey corresponded to the latent constructs introduced in sub-chapter 2.1. The web-based questionnaire provided access to primary and most up-to-date data. Respondents were asked to give their answers on the alliance that had been functioning at the moment of filling out the survey. In the survey, 7-point Likert (1932) type of scale was used, as it provides internal scale assessment and is believed to be a powerful tool for data analysis (Hair, 2010).

The questionnaire itself consisted of 3 sections (see Appendix 2). Section A contained questions on the basic information about alliances and respondents: country of operations, size, age, alliance type, industry, respondents' level of involvement in the alliance. In section A respondents were asked to choose alliance characteristics among the options introduced. Information provided by respondents in Section A was important to understand sample characteristics in more details. Section B of the questionnaire included questions on SAS. The answers to the questions in Section B were later used as data for indicators when measuring latent constructs (external stability, internal stability). Section C was dedicated to SAS determinants. Similar to answers in Section B, answers to Section C were used as data for indicators of SAS determinants (long-term orientation, trust, resource complementarity). As for the Sections B and C together, respondents were asked to evaluate their degree of agreement (1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree)

with the statements provided in the questionnaire. All the questions in a questionnaire were marked as obligatory for submission, therefore, no missing values were generated.

Contact details of respondents were extracted from two databases: SDC Platinum and Amadeus (Bureau van Dijk). Originally, a thousand email addresses of strategic alliances were extracted from SDC Platinum, however, as, generally, many strategic alliances are short-term, it is well-explained that 60% of email addresses from the extracted database did not exist at the moment of survey distribution. Only one response was generated from the original distribution attempt.

At a second attempt, a new database for contact addresses was compiled using Amadeus Bureau van Dijk. The most of responses, therefore, were obtained from sending the survey out to email addresses from Amadeus database. Particularly, the search was conducted using sub-databased (Owners – Shareholders, Owners - Immediate, Ultimate, Domestic Ultimate Owner, Owners – Subsidiary, Auditors, Bankers, Managers) and filters for each of them: Step 1 – ("Search entire database") and (Very large + Large + Medium +Small Companies) and (All countries); Step 2 – (Legal form) and (Legal status) and (Country) and (Email Address). The peculiarity of this source of contact information is that Amedeus does not specifically differentiate among alliances and non-alliances. The cover letter for the survey (see Appendix 1) addressed potential respondents explicitly specifying the assumption that a respondent should be somehow involved in a strategic alliance. All the requirements were repeated for respondents at a survey starting page. After deleting repeated email addresses, approximately 500 thousand email addresses were extracted from Amadeus for further distribution.

Out of 1167 potential respondents who have opened the link to the survey, 184 complete responses were obtained, which constitutes 15.77% of the original number. Afterwards, 9 answers were deleted from the original sample due to the fact that alliances were short-term (shorter than 1 year).

The total number of respondents who took part in the survey equals 184. However, some of the observations represented the alliances that were too young to draw any conclusions on their stability (less than 1 year of functioning). As strategic alliance stability is applied for long-term alliances, only the alliances that were at least one year of existence at the moment of respondent filling in the questionnaire. Consequently, the sample size was decreased to 175 observations.

Respondents were managers of strategic alliances, managers of partner companies and employers of both alliances and partner companies that operate in Europe. Raw data was collected in a form of a survey created at surveygizmo.com.

Most of respondents (48,0%) described themselves as managers of companies that participated in strategic alliances, while 39,4% of respondents were strategic alliance managers. The rest of respondents were either employed by a company involved in strategic alliances (7,4%), or worked in a strategic alliance (5,1%). No restrictions were posed on SA involvement of respondents due to scarcity of data. See Table 2.2 for reference. Overall, it can be argued that respondents were in a position to answer alliance-related questions by providing relevant information because approximately 90% of respondents represented either alliance management team or the management team of partner companies they were involved in strategic alliances.

Table 2.2. Respondents' involvement

Respondent's alliance involvement	**N**	**Share**
Partner (participant) company management team	84	48,0%
Strategic alliance management team	69	39,4%
Employed by a company that participates in a strategic alliance (not management team)	13	7,4%
Employed by a strategic alliance (not management team)	9	5,1%
Total	**175**	**100,0%***
**mistakes are possible due to rounding*		

Geographically (Table 2.3), alliances that respondents chose to provide information about, were located in Europe, most of the alliances operating in Germany (18,3%), Bulgaria (16,0%) and Finland (13,7%), representing Western, Eastern and Nothern Europe respectively. Generally, however, it can be argued that the sample is homogenous in terms of geography.

Table 2.3. Alliance geography

Country	N	Share
Germany	32	18,3%
Bulgaria	28	16,0%
Finland	24	13,7%
Denmark	14	8,0%
Russia	11	6,3%
Estonia	10	5,7%
Czech Republic	7	4,0%
Austria	5	2,9%
Belgium	5	2,9%
France	5	2,9%
Spain	5	2,9%
Switzerland	5	2,9%
Bosnia and Herzegovina	5	2,9%
Italy	4	2,3%
Cyprus	4	2,3%
United Kingdom	4	2,3%
Croatia	2	1,1%
Greece	1	0,6%
Norway	1	0,6%
Serbia	1	0,6%
Slovakia	1	0,6%
Turkey	1	0,6%
Total	**175**	**100,0%***
**mistakes are possible due to rounding*		

Speaking of the industry (see Table 2.4) alliances in a sample belong to, most of them are concentrated in the business services industry (19%), machinery industry comes second (9,2%), followed by chemical and allied products industry (5,2%). Overall, the sample constitutes of alliances that are distributed across over 18 industries.

Table 2.4. Alliance industry

Industry	N	Share
Business Services	33	18,9%
Machinery	16	9,1%
Chemicals and Allied Products	9	5,1%
Computers, Peripheral Equipment and Software	9	5,1%
Metal and Metal Products	9	5,1%
Electronic and Electrical Equipment	7	4,0%
Health Services	7	4,0%
Food and Kindred Products	6	3,4%
Transportation and Shipping (except air)	6	3,4%
Drugs	4	2,3%
Textile Mill Products	4	2,3%
Transportation Equipment	4	2,3%
Wholesale Trade-Durable Goods	4	2,3%
Computer Processing and Data Preparation and Processing	3	1,7%
Investment and Commodity Firms, Dealers, Exchanges	3	1,7%
Paper and Allied Products	3	1,7%
Transportation by Air	3	1,7%
Wholesale Trade-Nondurable Goods	2	1,1%
Aerospace and Aircraft	1	0,6%
Coal Mining	1	0,6%
Computer Integrated Systems Design	1	0,6%
Measuring, Medical, Photo Equipment; Clocks	1	0,6%
Petroleum Refining and Related Industries	1	0,6%
Prepackaged Software	1	0,6%
Security Systems	1	0,6%
Telecommunications	1	0,6%
Transportation by Air	1	0,6%
Other	34	19,4%
Total	**175**	**100,0%***
**mistakes are possible due to rounding*		

As it was mentioned previously, alliances that existed for less than 1 year were excluded from further consideration. The summary on the alliances by their age is introduced in the Table 2.5. Most of the alliances in the sample (48,0%) exist for longer than 5 years, the lowest share of alliances are between 3 and 5 years of existence.

Table 2.5. Alliance age

Number of years	N	Share
1-3 years	60	34,3%
3-5 years	31	17,7%
more than 5 years	84	48,0%
Total	**175**	**100,0%***
**mistakes are possible due to rounding*		

As for the size of alliances in the sample, the most part of them (54.3%) belong to the "micro" category, according to Eurostat classification, and have between 1 and 9 permanent employees. The second biggest category of alliances (22.9%) in the sample in terms of size is "small" alliances with 10-49 employees. The third biggest category of alliances (12.5%) in a sample are "large" alliances with 250 or more permanent employees. The rest of the sample (10.2%) is represented by "medium" alliances. Table 2.6 presents the alliance size summary for the sample.

Table 2.6. Alliance size

Alliance size	N	Share
1-9 (micro)	95	54.3%
10-49 (small)	40	22.9%
50-249 (medium)	18	10.2%
250 or more (large)	22	12.5%
Total	**175**	**100.0%***
**mistakes are possible due to rounding*		

Lastly, respondents were asked to classify their alliance into three categories: joint venture, minority equity alliance or non-equity alliance. Such classification is general enough (Das, Rahman, 2010), which is suitable for the purpose of this study. Judging by the Table 2.7, it can be argued that most alliances in the sample (46.9%) are non-equity alliances, followed by joint ventures (28.6%) and minority equity alliances (24.6%).

Table 2.7. Alliance type

Alliance type	N	Share
Joint venture	50	28.6%
Minority equity alliance (a member holds equity in the partner, or partners cross-hold equity in each other)	43	24.6%
Non-equity alliance (does not involve any equity or the transfer of ownership)	82	46.9%
Total	**175**	**100,0%***
**mistakes are possible due to rounding*		

Given the nature of variables under examination, the set of hypotheses and the type of relationships among variables (see Figure 2.1 above), in particular that some variables act as both, dependent and independent variables, and given the explanatory nature of the research the most appropriate method for data analysis would be structural equation modeling (SEM). SEM is a widely used tool in managerial researches because it enable the researcher to evaluate causal relationships between constructs that cannot be measured directly (latent constructs) (Hair, 2010; Grover and Malhotra, 2003), often describing theoretical concepts (Malhotra, Birks, 2007, p. 605), connected with a complex set of interrelationships (Hair, Ringle, Sarstedt, 2011).

The advantages of SEM compared to other multivariate techniques include (Suhr, 2006): (1) flexibility in terms of fields of application (e.g., psychology, economy, humanities); (2) allowance for the assessment of a causal relationships set, defined a priori, based on theory; (3) ability to test relationships among latent constructs (unobserved variables) contrary to traditional techniques that allow to work only with measured variables; (4) explicit specification and assessment of the error term; (5) allowance for multi-sided goodness-of-fit assessment for the model; (6) decreased possibility of issues related to multicollinearity due to the fact that multiple measured variables are used in order to describe one latent construct, therefore, SEM accounts for high correlations among measured variables within one latent construct; (7) simultaneous assessment of multiple linear regressions that provides a fuller picture of the examined relationships.

The variables represented by ovals in the conceptual model (Figure 2.1) represent latent constructs and will be referred to as “latent constructs” or “constructs” later on. Considering the sample size that is sufficient for running the covariance-based SEM (CB-SEM), this study follows the CB-SEM methodology for the conceptual model assessment. For this purpose, IBM SPSS Amos 19 software package was used. Therefore, Chapter 3 reproduces the logic of a two-step SEM-methodology.

2.3 Chapter 2 concluding remarks

Chapter 2 is dedicated to hypotheses development based on existing academic literature. Unlike the majority of studies that view SAS as a one-dimensional construct, this research breaks it down to two parts: external and internal stability. The choice of determinants was based on recent conceptual models from recent studies (Deitz et al, 2010; López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013) and results of empirical tests.

Overall, 8 hypotheses were formulated that covered theoretical relationships between strategic alliance stability components and strategic alliance stability factors, between strategic alliance stability components themselves, and between strategic alliance stability factors. The final conceptual model is introduced in the Figure 2.1. Strategic alliance stability components (external, internal stability) and their determinants (resource complementarity, trust, long-term orientation) are incorporated in the model.

Then, the data collection process and the sample were described in the Chapter 2. Data was collected on the basis of a web-based questionnaire that was distributed through emails. The main part of questions is a survey (Section B and Section C) corresponded to latent constructs indicators used for the following SEM analysis (see Appendix 2 for the questionnaire, Chapter 3 for SEM analysis). All the indicators were measured with a 7-point Likert scale.

Two databases were used to extract contact information of potential respondents: SDC Platinum and Amedeus Bureau van Dijk. Totally, over 500 thousand email addresses of European companies were used for final distribution via email. One of the peculiarities of the final emails set was that there was no indication of whether or not the recipient company is involved in a strategic alliance. Therefore, the condition of alliance involvement was indicated as a major requirement in the cover letter for the survey (see Appendix 1). All the requirements were repeated for respondents at a survey starting page. Overall, the link was opened by 1167 potential respondents who have opened the link to the survey, 184 provided full answers (15.77%). However, 9 of them were deleted from the original sample due to the fact that alliances were short-term (shorter than 1 year). Overall, a sample of 175 observations was obtained.

As for the sample, alliance information and respondents' status were analyzed. Approximately 40% of respondents represented SAs management team, nearly 50% represented partner companies' management team, which totals approximately 90% of respondents who are certainly capable of providing relevant responses. The sample used for further analysis is homogenous in terms of geography as all the alliances operated on the territory of Europe, however, alliances differ by industry, size, type and age to a certain extent. These differences were

not considered in the research, given the initial complexity of the model and the scarcity of data, which did not allow to cut the sample size in order to reach overall homogeneity.

CHAPTER 3. EMPIRICAL STUDY ON STRATEGIC ALLIANCE STABILITY FACTORS

3.1 Data analysis and measurements

For the purpose of data analysis, IBM SPSS Statistics 19 and IBM SPSS Statistics Amos 19 were utilized to conduct data analysis. Apart from the analysis of responses presented in the sub-chapter 2.4 (alliance country, industry, respondent's status, alliance age and size), an analysis of standard deviation (SD), minimum and maximum scores were analyzed.

Following the conceptual model and the chosen tool for an empirical study, a set of questions was formulated in order to measure latent construct (see sub-chapter 3.2 and Appendix 2 for more detailed information). Each construct (external stability, internal stability, long-term orientation, trust, resource complementarity) was measured with several indicators, which were subject to further analysis. All the indicators were measured by a 7-point Likert (1932) scale, which is commonly used in managerial studies (Hair, 2010). During the survey, respondents were asked to evaluate statements using the following scale: 1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree.

The results summary of descriptive statistics are presented in the Tables 3.1-3.5.

Table 3.1. Descriptive statistics. External stability

Indicator code (question)	Mean	SD	N
ES-1 (Generally, there is a constant improvement in alliance's economic result)	5.10 (somewhat agree)	1.303	175
ES-2 (Most often, alliance meets its economic objectives (e.g., revenue, net profit, additional benefits generated for partner companies, etc.)	5.17 (somewhat agree)	1.205	175
ES-3 (Overall, revenue trend of the alliance can be characterized as rising)	5.14 (somewhat agree)	1.247	175
ES-4 (Overall, net profit trend of the alliance can be characterized as rising)	4.92 (somewhat agree)	1.297	175

Regarding external stability, average scores for indicators are varying around score 5, meaning "somewhat agree". Therefore, on average, it can be implied that alliances respondents chose to talk about somewhat externally stable alliances. Standard deviations for each indicator are comparable among each other. Only the net profit trend was assessed by respondents a little below 5-score.

Table 3.2. Descriptive statistics. Internal stability

Indicator code (question)	Mean	SD	N
IS-1 (There is a well-established procedure of how benefits from the strategic alliance are shared among participants)	5.35 (somewhat agree)	1.381	175
IS-2 (There is a mutual understanding on how the benefits from the strategic alliance should be shared among alliance participants)	5.36 (somewhat agree)	1.390	175
IS-3 (Participants are absolutely satisfied with this form of cooperation compared to other possibilities (e.g., different forms of cooperation with other companies, such as other alliances)	4.77 (somewhat agree)	1.396	175
IS-4 (Participants will continue cooperation in this alliance form until the termination date)	5.48 (somewhat agree)	1.203	175
IS-5 (Participants are involved in solving alliance issues)	5.50 (agree)	1.077	175

As for internal stability (Table 3.2), mean scores show a more positive respondents' perception of it. Generally, the mean scores can characterize an average alliance in the sample as internally "somewhat stable". However, the question that indicates participants' satisfaction from alliance participation was given a lower score on average compare to other indicators, with a higher standard deviation.

Table 3.3. Descriptive statistics. Long-term orientation

Indicator code (question)	Mean	SD	N
LTO-1 (Participants believe that over the long run the alliance will be profitable)	5.80 (agree)	1.130	175
LTO-2 (Maintaining a long-term relationship among the participants is important for them)	5.73 (agree)	1.137	175
LTO-3 (Participants focus on long-term goals in this alliance)	5.46 (somewhat agree)	1.153	175
LTO-4 (Participants believe that any concessions they make to help out among them will even out in the long run)	5.21 (somewhat agree)	1.111	175
LTO-5 (Participants expect working together for a long time)	5.66 (agree)	1.107	175
LTO-6 (Participants are willing to make sacrifices to help out among them from time to time)	5.05 (somewhat agree)	1.205	175

Descriptive statistics shows (Table 3.3) that generally respondents have said that they agree or somewhat agree that alliance partners in the alliance they have chosen for their responses, were

either long-term oriented or somewhat long-term oriented. The scores for indicators range from 5.05 to 5.8. The lowest score is associated with the indicator LTO-6, the highest – with LTO-1.

Table 3.4. Descriptive statistics. Resource complementarity

Indicator code (question)	Mean	SD	N
RC-1 (Together, participants have been adding a substantial value to the alliance)	5.69 (agree)	0.939	175
RC-2 (Alliance participants bring to the table resources and competencies that complement those of other participants)	5.68 (agree)	1.062	175
RC-3 (Strategic fit between participants could not be better)	4.57 (somewhat agree)	1.456	175
RC-4 (All participants contribute different resources that help achieve their mutual goal)	5.30 (somewhat agree)	1.181	175
RC-5 (Participants have complementary strengths that are useful to their relationship)	5.62 (agree)	1.038	175
RC-6 (Each participant has separate abilities that, when combined together, enable them to achieve goals beyond their individual reach)	5.67 (agree)	1.069	175

In general, judging by respondents' responses, an average alliance in a sample has complementary resources (Table 3.4). Means for every indicator are in line with each other, and most of them exceed 5.5 score. However, some of the indicators show a lower complementarity in resources than others (RC-3, RC-4). Such score allocation might have occurred due to the fact that these respective questions ask respondents for a more profound understanding of the role of resource complementarity for their alliance.

Table 3.5. Descriptive statistics. Resource complementarity

Indicator code (question)	Mean	SD	N
T-1 (Participants believe that another participant (other participants) is (are) honest)	5.25 (somewhat agree)	1.341	175
T-2 (Participants consider each others perspective)	5.20 (somewhat agree)	1.246	175
T-3 (Participants are always faithful)	5.27 (somewhat agree)	1.170	175
T-4 (Partners found it necessary to be cautious in dealing among themselves)	4.52 (somewhat agree)	1.497	175
T-5 (Participant(s) are honest and truthful among themselves)	4.93 (somewhat agree)	1.320	175
T-6 (Participants interact with each other fairly and justly)	5.06 (somewhat agree)	1.340	175

Overall, judging by descriptive statistics (Table 3.5), on average, partners somewhat trust each other. Average scores exceed the medium 4-point, most average scores exceed 5 points (somewhat agree). Hence, survey participants perceived that alliance participants have trust in each other and their relationship, but the assessment of some of the manifestation of trust in partner relationships vary in the sample more (SD for T-4 1.497) and assume the lowest averages (4.52) among trust indicators.

A more profound analysis of latent constructs (validity, reliability, correlations) is provided in the following sub-chapter 3.2.

3.2 Measurement model development and assessment

SEM represents a set of statistical techniques that combines factor and regression analysis, which allows evaluating causal relationships among different sets of dependent and independent constructs, organized in linear structural equations, at the same time. The peculiarity of SEM is that it allows one construct to be independent in one set of relationships, but dependent in another set (Malhotra, Birks, 2007; Hair, 2010). In SEM, latent constructs are measured by measured variables, also denoted as observed variables or indicators.

SEM has become increasingly popular and constitutes a new standard of managerial researches. Not only it allows to assess a set of inter-dependent relationships where one construct might be both dependent and independent, SEM also allows to deal with non-normal data (Hair, 2010). Other benefits of SEM compared to traditional multivariate techniques are analyzed in the sub-chapter 2.3.

The SEM process is traditionally divided into 2 stages: measurement model (MM) development and assessment, and structural model (SM) specification and assessment (Hair, 2010). Hence, this approach is known as a two-step SEM process. Confirmatory factor analysis is used to assess the MM fit and validity to ensure that the measures are satisfactory to serve as a basis for a SM. After MM is proved to be adequately represent theory with the data obtained for the study, SM assesses the structural theory, or a set of dependencies between latent constructs. Therefore, the main difference between the CFA and the SM assessment is that the CFA is used to assess the relationships between indicators and latent constructs, while the SM examines relations between latent constructs.

This research follows a two-step SEM approach. The first step in this approach requires to develop and assess the MM, the second step requires to specify and assess the MM (Hair, 2010). This sub-chapter deals with the first step of the two-step SEM.

MM corresponds to the conceptual model (Figure 2.1) in terms of latent constructs that need to be measured by a set of measured variables. To recap, latent constructs are the following: external stability, internal stability, trust, long-term orientation, resource complementarity. Each of them has a set of indicators, or measured variables, used for latent construct assessment. These indicators and their codes are presented in the Appendix 2. All the measured variables in the MM, hence, in SM, are reflective meaning that latent construct cause measured variables to occur, which is a typical way of representing latent constructs (Hair, 2010). In the survey, participants were asked to evaluate statements about their alliance on a 7-point Likert scale (from "1" – "Completely disagree" to "7" – "Completely agree"). All the questions that participants were asked matched theoretical understanding of the concepts.

Before the final launch of a survey, a small-scale test survey was conducted in order to assess the difficulty level and identify potential sources of survey improvement (e.g., web-survey navigation, level of question comprehensiveness, question wordings). One out of five test survey respondents indicated that all the questions were formulated comprehensively and could be answered by those practitioners who are involved in working with strategic alliances. Later on, during the course of a survey, 2 respondent voluntarily noted that they found the questionnaire easy and comprehensive, which was later supported by "real" respondents feedback in some cases, therefore, supporting the notion that face validity of constructs is present.

External stability views SA as a separate economic entity, so it is possible for an external observer to draw conclusions on its stability. Following external stability definition (see sub-chapter 1.4), it is assumed that a strategic alliance is externally stable in case its economic results show a raising trend (Zenkevich, Koroleva, Mamedova, 2014a, b). Economic results of the strategic alliance might include its net profit, revenue, market share, etc. Therefore, survey participants were asked to evaluate statements about strategic alliance economic results (on a scale from "1" – "Completely disagree" to "7" – "Completely agree") from the most general to more exact terms.

As discussed in sub-chapter 1.4, ***internal stability*** of a strategic alliance is a multi-dimensional construct, and is comprised of motivational, strategic and dynamic stability. Therefore, each of these elements should be reflected in internal SAS measurement scale. Inter-partner relationships play a great role in strategic alliance stability (Deitz et al., 2010), and their constant mutual involvement in alliance activities is an important element of its stability that eventually has an effect on alliance performance. The extent to which partners are involved into alliance activities stem from their motivation to enhance alliance economic results, therefore, to maximize their own benefits (Wong, Tjosvold, Zhang, 2005; Deitz et al, 2010; Gulati, Khanna,

and Nohria 1994; Sarkar et al. 2001; López-Navarro, Callarisa-Fiol, Moliner-Tena, 2013). The next element of internal stability is the dynamic stability, which is observed in cases when partners' expected and gained benefits correspond to the benefits expected at the moment of signing the contract (Zenkevich, Petrosjan, 2006; Kumar, 2011). According to the optimal decision principle (Zenkevich, Petrosyan, Yang, 2009), the fact that the contract was signed among partners and they have agreed on cooperation indicates that partners have accepted the rules of benefits sharing and that they have a clearly established procedure of how benefits should be split among them. Hence, in case of dynamic stability, the procedure of benefits sharing is also known to participants. Lastly, if an alliance is strategically stable, all the participants prefer to stay within a particular alliance given all other options available, and are likely to continue cooperation further without leaving the alliance prematurely (Zenkevich, 2009; Zenkevich, Koroleva, Mamedova, 2014a, b). Therefore, participants were asked to evaluate statements about partners' contribution to the alliance, benefits sharing and their attitude to the current alliance.

As it was discussed previously in the sub-chapter 1.5, ***trust*** is an important characteristic of partner relationships in strategic alliances. In their study on the third-party supplier relationships, Huo, Ye, Zhao (2015) claim that trust is indicated by one party's assessment of another's honesty, eagerness to consider the party's perspective. Another indication of presence of trust in a relationship would be an outside observation of partners' relationships that were characterized as honest and truthful, fair and just (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013). Overall, if partners stay faithful to each other (Deitz et al, 2010), this is an indicator of trust in a relationship. At a contrary, the fact that partners found it necessary to deal cautiously with each other would indicate the absence of trust (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013).

Partners with ***long-term orientation*** hope for their relationship with each other to bring them economic benefits in the future (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013; Ganesan, 1994; Kelley and Thibaut, 1978). As follows, due to the value that the cooperation generates, partners would be concerned about their existing relationship (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013; Das and Teng, 2000). Logically, contrary to short-term oriented firms who would push the partner to generate quicker results (Das, Rahman, 2010) and try to get immediate benefit from each transaction (Das and Teng, 2000; Ganesan, 1994), long-term oriented partners would put their long-term goals before the quick gain (Das and Teng, 2000). Moreover, there is evidence that partners with long-term orientation will adjust their behavior in order to focus on the achievement of the long-term goals, e.g., partners will assist each other in resolving issues because they believe that another partner will do the same for them (Griffith,

Harvey and Lusch, 2006; Lee and Dawes, 2005; Lusch and Brown, 1996). In other words, long-term orientation promotes the alignment in partners' goals and actions (López-Navarro, Callarisa-Fiol and Moliner-Tena, 2013).

In case partners acknowledge that their ***resources are complementary***, they are likely to assume that each of them adds substantial value to the alliance jointly as well as that their resources and competencies complement each other. Moreover, partners are likely to agree that the strategic fit among them is the best possible and, therefore, they could not have found a partner with a better strategic fit (Deitz et al, 2010), as the combination of resources among them creates a competitive advantage through synergies (Hunt, Lambe and Wittmann, 2002) and helps attain their joint objectives (Lambe, Spekman and Hunt, 2002; Hunt, Lambe and Wittmann, 2002). Moreover, given that resources are complementary, it means that they should be distinct (Hunt, Lambe and Wittmann, 2002) to create synergies between partners and provide more benefits to partners than they could have gained operating individually (Lambe, Spekman and Hunt, 2002).

Initial confirmatory factor analysis. Before the CFA was done, measured variables with reversed scores were recoded to directly reflect the latent construct. The re-coding was done by subtracting the observed score from the highest value on a scale plus one, which totals 8.

Measurement model validity assessment is a crucial step in SEM as it compares the empirical data against theoretical measurement model developed earlier in this chapter. The assessment of measurement model validity contains several elements, which are: overall model fit assessment and construct validity. When construct validity is analyzed, the attention is paid to convergent, discriminant, nomological and face validity (Hair, 2010).

Following Van Dijk (2014), it was decided to run a preliminary test of construct reliability analyzing each of the constructs separately from other ones. In a statistical sense, reliability referred to as a percent of observations that are inconsistent among each other due to individual differences that are natural for different respondents, given that the survey has been conducted among individuals. This means that even a reliable survey will have different responses to the same questions due to the fact that respondents' opinion on questions will differ among respondents, not because of the fact that the questionnaire questions were unclear or incomprehensive. Therefore, a test for reliability was conducted for all 5 latent constructs.

The preliminary reliability analysis was conducted using Cronbach's alpha coefficient. It indicates that all latent construct taken separately, disregarding possible correlations between them and potential cross-loadings are able to capture the concept described. Cronbach's alpha was calculated in IBM SPSS Statistics 19 software package, and analyzed afterwards. In general

practice, Cronbach's alpha cut-off is 0.7, but small negative deviations are admissible (Cooper and Schindler, 2006; Malhotra and Birks, 2006). The result of Cronbach's alphas test is summarized in the Table 3.1 below. More detailed results of the test can be found in Appendix 3.

However, for SEM is it important to keep the number of indicators for each latent construct over 3 to keep the model overidentified (Hair, 2010). Therefore, in case it was possible, and indicators could be kept within a construct, it was done this way. The total number of latent variables in the MM equals to 8, and each of the constructs is assessed by at least 3 factors to keep the model overidentified in order to make valid assessment of each latent variable and of the MM overall (Hair, 2010).

Table 3.6. Cronbach's Alpha Summary

Latent construct	**Number of indicators**	**Cronbach's alpha**
External stability	4	0.844
Internal stability	5	0.813
Trust	6	0.905
Long-term orientation	6	0.899
Resource complementarity	6	0.846
All indicators	**27**	**0.927**

The results in the Table 3.6 indicate that all the latent constructs have Cronbach's alpha results above 0.7 threshold. Moreover, the composite Cronbach's alpha of the whole dataset is well above the threshold of 0.7.

CFA is the next step of the SEM analysis to ensure convergent, discriminant and face validity along with construct reliability (Gerbing and Anderson, 1988) as well as the overall model fit. Each indicator loading was treated as an a priori indicator for the latent construct it measures, and all the latent constructs were allowed to be correlated as there was no ground for an assumption that latent constructs are not correlated. The output for the MM after the initial CFA can be found in the Appendix 4.

Measurement model fit assessment is necessary to identify, how well the observed data fits the theoretical measurement model developed at earlier stages. The overall fit of the MM was assessed by several indices to have a better understanding of the goodness-of-fit for the measurement model. The rule of thumb suggests relying on, at least, one absolute fit index and one incremental fit index apart from traditional χ^2 results. Table 3.7 compares the expected MM fit indices for the good fit with the obtained ones.

Table 3.7. Initial Measurement Model Assessment

Expected*		**Obtained**
χ^2	Significant p-values expected	728.409 (p = 0.000) df = 314
χ^2 normed	<2.0 – good fit 2.0-5.0 – acceptable fit	2.32
CFI	> 0.95 great > 0.90 moderate > 0.80 sometimes acceptable	**0.853**
RMSEA	< .05 good 0.05 - 0.10 moderate > 0.10 bad	**0.087** 90 percent confidence interval RMSEA = (0.079; **0.095**)

**Source: (Hair, 2010; Van Dijk, 2014)*

Results presented in the Table 3.7 demonstrate some issues with the MM fit. First of all, the comparative fit index (CFI) is lower than the required 0.9 threshold for an adequate fit. Moreover, root mean square error of approximation (RMSEA) is also considered to be moderate, but not good enough. The χ^2 normed, which is calculated as χ^2 divided by the degrees of freedom, suggests an acceptable, yet not perfect MM fit. Overall, given the mixed evidence, it makes sense to improve the measurement model as, generally, the SM will have a less good fit than the MM.

To find the areas of MM improvement, construct validity is assessed along with standardized residuals and modification indices.

The analysis of *construct validity* begins with the analysis of convergent validity (factor loadings of greater than 0.5, preferably higher than 0.7). Appendix 4 that includes initial CFA results, contains data on all the factor loading produced after the initial CFA. Table 3.8 summarizes information on factor loadings that are lower than the ideal 0.7 cut-off.

No indicators have shown factor loadings below 0.5 threshold, however, 8 indicators out of 27 have shown factors loading below the ideal cut-off point of 0.7 (see Table 3.8), which is not critical, however, can cause issues with construct reliability.

Table 3.8. Initial CFA. Factor loadings between 0.5 and 0.7

Construct	Indicator	Estimate
Internal stability	IS3	0.685***
	IS4	0.679***
	IS5	0.523***
External stability	ES2	0.569***
Resource complementarity	RC1	0.566***
	RC3	0.601***
Trust	T3	0.672***
Long-term orientation	LTO6	0.662***
*** *significantly different from zero at the 0.001 level (two-tailed)*		

As a next step in assessing construct validity, average variance extracted (AVE) and construct reliability (CR) (see formula (1), (2) respectively, Table 3.9 for the result of calculations) were calculated manually using standardized factor loadings and squared multiple correlations from the output. The calculations followed the formulas below.

$$AVE = \frac{\sum_{i=1}^{n} {L_i}^2}{n}, \tag{1}$$

where L_i is standardized factor loading, *n* is the total number of items loaded on a construct, *i* is the number of an individual item.

$$CR = \frac{\left(\sum_{i=1}^{n} L_i\right)^2}{\left(\sum_{i=1}^{n} L_i\right)^2 + \left(\sum_{i=1}^{n} e_i\right)}, \tag{2}$$

where where L_i is standardized factor loading, e_i is the error variance term for each item, *n* is the total number of items loaded on a construct, *i* is the number of an individual item.

Table 3.9. Initial CFA: Construct validity and reliability

Construct	**AVE**	**CR**	**DV**				
			ES	IS	RC	T	LTO
ES	0.59	0.85	1	0.15	0.05	0.16	0.20
IS	**0.48**	0.82		1	0.35	0.33	0.19
RC	0.51	0.86			1	0.21	0.16
T	0.62	0.91				1	0.35
LTO	0.61	0.90					1

For an adequate construct validity, the AVE coefficient should at least reach the threshold of 0.5, which would mean that the indicators explained at least half of the variance of the latent construct. See Table 3.9 for results of these calculations for the model. Only one construct, IS does not reach the threshold of 0.5, however, it is very close to it. This issue might be caused by the proportion of lower than 0.7 factor loadings for indicators in the factor IS (see Table 3.8). However, it is important to keep all the indicators for IS construct in order to keep the face validity of it.

For good construct reliability, CR needs to be over 0.7, however, CR between 0.6 and 0.7 is also acceptable, especially in case when no other issues with the construct are indicated. High construct reliability indicates that the measured variables represent the same latent construct. All the CR coefficients calculated for latent constructs in the model surpass the desired threshold, therefore, indicating good construct reliability (see Table 3.9).

The next step in construct validity analysis is the assessment of *discriminant validity*. Statistically speaking, discriminant validity represents the extent to which a construct is distinctive from other constructs. In other words, if the discriminant validity is proven, the conclusion can be made that within the MM, a construct captures the phenomena other constructs do not. The analysis of discriminant validity usually starts with the examination of inter-construct covariances, or correlations if standardized measures are considered. The rule of thumb is that AVE for each latent construct should exceed the squared interconstruct correlations associated with it. The information on correlations and squared correlations can be addressed in the Table 3.9.

After the assessment of discriminant validity, nomological validity of constructs was evaluated. Nomological validity of latent constructs means that they correlate with each other in a meaningful way. Refer to Table 3.10 for inter-construct correlations.

Table 3.10. Initial CFA: Inter-construct correlations

	ES	IS	RC	T	LTO
ES	1				
IS	0.39***	1			
RC	0.23*	0.59***	1		
T	0.41***	0.57***	0.46***	1	
LTO	0.45***	0.44***	0.40***	0.59***	1

** significantly different from zero at the 0.05 level (two-tailed)*
**** significantly different from zero at the 0.001 level (two-tailed)*

Most of the correlations between constructs are statistically significant at 0.001 significance level. Not only the expected correlations between constructs are significant, the

correlations also have an expected sign, supported by the theory. According to Field (2005), strong correlations exceed 0.5 (between LTO and T, between T and IS, between RC and IS), moderate correlations are between 0.3 and 0.5 (between ES and IS, T and ES, LTO and ES, LTO and IS, RC and T, LTO and RC). Correlations of 0.10 and below are considered to be low. No correlations in the Table 3.10 are lower than 0.10, however, correlation between RC and IS is 0.23, which is between 0.10 and 0.30, so it can be considered as weak-moderate.

The last piece of construct validity analysis is related to their *face validity*. Face validity or constructs is based on the fact that all the measured variables were adapted from previous studies and adapted to suit the needs of a research. Moreover, as a test survey launch has proven, respondents were able to comprehend the logic of a questionnaire overall and of each question in particular.

Some issues with *MM specifications* have already been discovered. However, a more thorough analysis might be required to improve the MM. There are two additional methods for this, apart from the analysis of path estimates, or standardized factor loadings, that are widely used in statistical analysis. These are standardized residuals (SR) analysis and modification indices (MI) analysis.

Standardized residuals are "computed for every covariance and variance in the observed covariance matrix" and their number corresponds to the number of unique elements in the covariance matrix (Hair, 2010). Standardized residuals that have values between |2.5| and |4.0| generally require special consideration, but rarely require that an indicator should be eliminated from the measurement model. However, standardized residuals greater than |4.0| usually indicate some measurement issues to be treated as standardized residuals in this case show significant differences between the observed and estimated covariance terms, therefore, indicating poor fit.

Therefore, the matrix of standardized residuals was analyzed to find standardized residuals that would indicate the presence of model fit problems. None of the residuals in the matrix exceeded |4.0|, and only two standardized residual absolute value fell between 2.5 and 4.0: between RC2 and IS5 (SR = 3.138), and RC2 and T4 (SR = -2.405). However, these values are not critical and to not require special treatment given the absence of other important problems with constructs.

As a next step, modification indices were considered. The most problematic MIs in the model correspond to 4 measured variables: T2, T4, RC1, RC2. The summary of modification indices are presented in the Appendix 5. Therefore, to avoid potential problems with further model interpretation, these doubtful variables were deleted from the model.

The model fit has improved, but did not reach desirable model fit indicators (e.g., CFI of at least 0.9 for an adequate model fit). Therefore, MI for residuals within the same factor were also assessed for potential problems similarly to what was done for cross-loadings. Some of them were treated by drawing covariances between problematic error terms within the same latent construct one by one starting from the most problematic ones. The covariances were drawn for errors of the following indicators: T3 and T5, LTO1 and LTO2, IS1 and IS3, RC5 and RC6.

Final confirmatory factor analysis. The final CFA serves the purpose to ensure that MM respecifications have lead to the improvement of MM fit, validity and reliability of constructs. Overall, the procedure of the final CFA is conducted following the logic applied to the initial CFA. The respecified CFA can be found in Appendix 6.

The new validity assessment procedure has to be held in order to ensure the new MM overall fit along with construct validity.

The final MM *overall fit assessment* follows the same procedure described in the procedure in paragraph 3.2.2. SPSS Amos output is reported in the Appendix 6. MM comparisons are introduced in the Table 3.7.

Table 3.11. Measurement Models Comparison: Initial and Final CFA

Expected*		**Initial CFA**	**Final CFA**
χ^2	p < 0.05	728.409 (p = 0.000) df = 314	394.737 (p = 0.000) df = 216
χ^2 normed	<2.0 – good fit 2.0-5.0 – acceptable fit	2.32	1.82
CFI	> 0.95 great > 0.90 moderate > 0.80 sometimes acceptable	**0.853**	0.919
RMSEA	< .05 good 0.05 - 0.10 moderate > 0.10 bad	**0.087** 90 percent confidence interval RMSEA = (0.079; **0.095**)	0.069 90 percent confidence interval RMSEA = (0.058; 0.079)

**Source: (Hair, 2010; Van Dijk, 2014)*

After MM respecifications that followed the initial CFA, the measurement model suggests good overall fit. CFI, RMSEA, χ^2 and χ^2 normed have improved significantly.

Construct validity starts with convergent validity test and the analysis of standardized factor loadings. All the loading in the final CFA prove to be statistically significant at a 0.001 level, however, one indicator, IS5 has a factor loading of 0.491, which is 0.09 points lower than the desired 0.5 threshold. Nevertheless, it is highly desired to keep the indicator within the model in order to keep construct integrity and face validity.

After the respecification, AVE and CR have improved. AVE coefficient for IS has improved a little from 0.48 to 0.49, falling just 0.1 below the AVE threshold. Discriminant validity was also confirmed for all the constructs. Refer to Table 3.12 for the results of these calculations.

Table 3.12. Final CFA: Construct validity and reliability

Construct	**AVE**	**CR**	**DV**				
			ES	IS	RC	T	LTO
ES	0.59	0.85	1	0.15	0.05	0.16	0.20
IS	**0.49**	0.83		1	0.36	0.36	0.20
RC	0.50	0.71			1	0.25	0.13
T	0.64	0.88				1	0.36
LTO	0.60	0.90					1

As a next step, nomological validity was checked by addressing the correlations matrix for constructs (see Table 3.13). Correlations are significant and meaningful, therefore, the nomological validity can be argued. A slight increase in correlations between IS and RC, IS and T, RC and T, T and LTO can be spotted, however, correlations between RC and ES, ES and T, LTO and ES, LTO and RC have decreased slightly (see Table 3.10 for comparison).

Table 3.13. Final CFA: Inter-construct correlations

	ES	IS	RC	T	LTO
ES	1				
IS	0.39***	1			
RC	0.22*	0.60***	1		
T	0.40***	0.60***	0.50***	1	
LTO	0.44***	0.44***	0.36***	0.60***	1

** significantly different from zero at the 0.05 level (two-tailed)*
**** significantly different from zero at the 0.001 level (two-tailed)*

3.3 Structural model specification and assessment

After conducting CFA, the SM can be put forward for the analysis. The constructs used in the scheme have proven their overall validity and reliability during the CFA procedure, therefore, can be considered as a base for further SM analysis.

In principle, SEM represents a combination of linear equations that are used to test causal relationships between latent constructs (Hair et al., 2010). As a final result, SEM is used to identify to which extent the theoretically developed model fits observed data in the sample. The main difference between CFA and SEM is that in SEM the attention is shifted to relationships between latent constructs rather than the relationships between indicators and latent constructs.

Figure 3.1 provides a graphical representation of a SM, and matches the conceptual model. In the figure, only causal relationships between latent constructs are shown, measured variables are omitted for convenience of the reader. The number of latent constructs equals 5, each of them is measured by at least 3 indicators. The overall number of indicators equals 23, which means the model is over-identified.

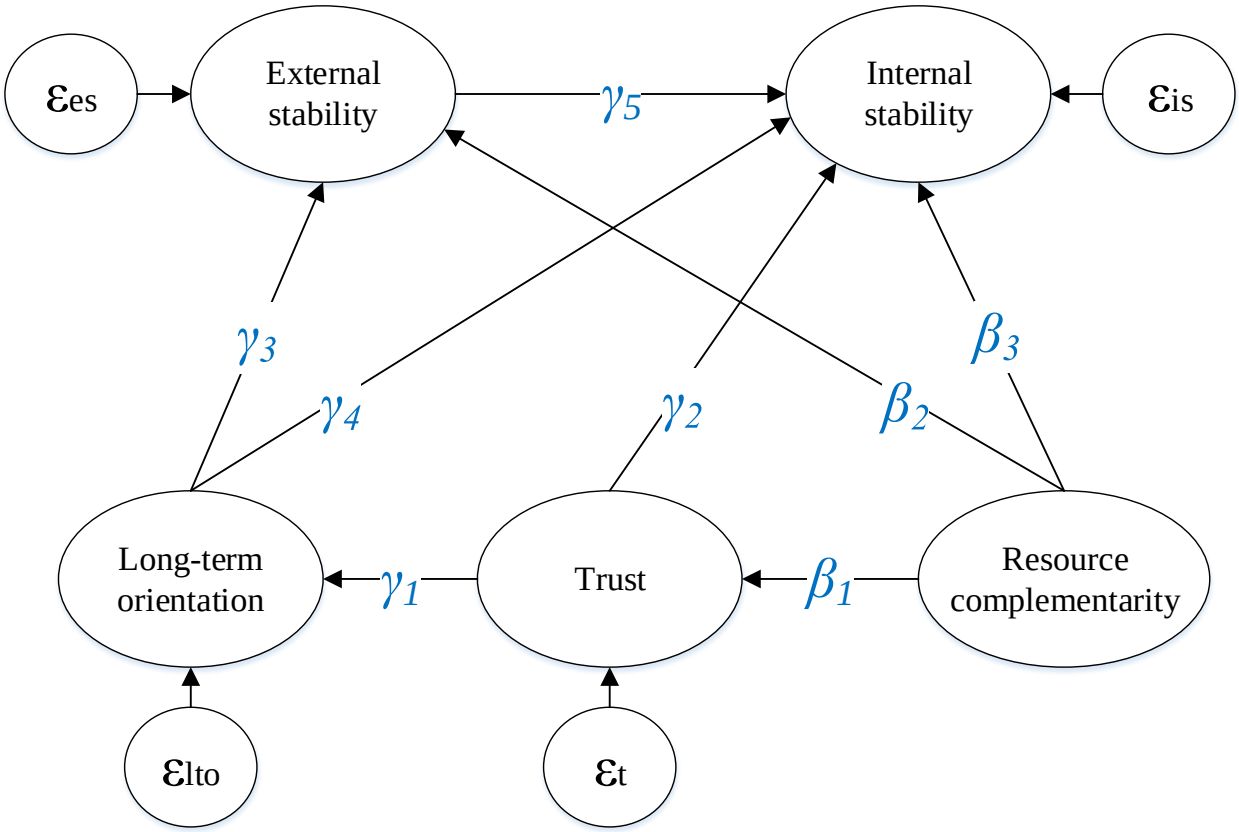


Figure 3.1. Structural Model of Strategic Alliance Stability Factors

In the Figure 3.1 path coefficients β_i , where i = 1, 2, 3, represent path coefficients on paths stemming from the exogenous variable *Resource complementarity*. Path coefficients γ_j, where j = 1, 2, 3, 4, 5, evaluate causal relationships stemming from endogenous constructs (*Trust*, *Long-term orientation*, *External stability*). The same path diagram can be represented by a set of equations below:

$$\begin{cases} ES = \gamma_3 LTO + \beta_2 RC + \varepsilon_1 \\ IS = \gamma_5 ES + \gamma_4 LTO + \gamma_2 T + \beta_3 RC + \varepsilon_2 \\ LTO = \gamma_1 T + \varepsilon_3 \\ T = \beta_1 RC + \varepsilon_4 \end{cases} \quad (3),$$

where ES – *External stability*, IS – *Internal stability*, LTO – *Long-term orientation*, T – *Trust*, RC – *Resource complementarity*, $\gamma_j, j \in [1; 5]$ – path coefficients, denoting the effect of endogenous construct on another endogenous construct, $\varepsilon_n, n \in [1; 4]$ – error terms for endogenous constructs, $\beta_i, i \in [1; 3]$ - path coefficients, denoting the effect of exogenous construct on endogenous construct.

Based on the hypotheses that have been formulated (see sub-chapter 2.2), the model includes 4 endogenous and 1 exogenous constructs.

Factor loadings for the SM are treated as not fixed, as suggested by most scholars to be an appropriate treatment of factor loadings in SEM (Hair, 2010). Small fluctuations (less than 0.05) between the loadings value after CFA and after SEM are expected and treated as normal.

The baseline *for assessing structural model fit* is the measurement model (MM) fit obtained as a result of the CFA. In general, SM fit cannot be better than the MM fit (Hair, 2010), this baseline can be used to identify suspicious results. At this stage, it is proven that the MM is valid based on the results of the CFA, however, the need for assessment of relationships between constructs that are driven by theoretical assumptions (see sub-chapter 2.1) require closer attention.

The procedure of the SM assessment is similar to the series of steps performed during the CFA. Therefore, structural model assessment starts with the estimation of the overall model fit. Following the logic, explained in sub-chapter 2.1, it was decided to test a series of SM in order to better differentiate between direct and indirect effects in the final model (see Figure 2.1, Figure 3.1). The summary of the *overall SM fit test* is presented in the Table 3.14 below.

Table 3.14. Measurement and structural models comparison

Model Fit Indices						
Expected*		**Final CFA**	**SM (direct)**	**SM (ES→IS)**	**SM (ES→IS, RC→ T)**	**SM (ES→IS, RC→T, T→LTO)**
χ^2	p < 0.05	394 df = 216	420.234 (p=0.000) df = 219	415.471 (p=0.000) df=218	457.317 (p=0.000) df=219	417.108 (p = 0.000) df = 219
χ^2 normed	<2.0 – good fit 2.0-5.0 – acceptable fit	1.82	1.92	1.91	2.10	**1.90**
CFI	> 0.95 great > 0.90 moderate > 0.80 sometimes acceptable	0.919	0.911	0.912	0.894	**0.912**
RMSEA	< .05 good 0.05 - 0.10 moderate > 0.10 bad	0.069 90 percent confidence interval RMSEA = (0.058; 0.079)	0.073 90 percent confidence interval RMSEA = (0.062; 0.083)	0.072 90 percent confidence interval RMSEA = (0.062; 0.083)	0.079 90 percent confidence interval RMSEA = (0.069; 0.089)	0.072 90 percent confidence interval RMSEA = (0.062; 0.083)
PNFI	N/A	N/A	0.720	0.719	0.707	**0.721**

**Source: (Hair, 2010; Van Dijk, 2014)*

Table 3.14 compares 5 models: final MM tested with CFA and 4 SMs, tested in a SEM format (see Figures 2.2-2.4 for interim conceptual models). The final CFA is presented as a benchmark for further SM assessment as the results for an overall model fit cannot usually be better than those for the SM (Hair, 2010). The 4 structural models were introduced for comparison among them in order to make a deeper analysis of relationships between constructs, which requires the model to adequately fit the empirical data.

As can be concluded from the Table 3.14, the two best models out of 4 is the model where only the direct relationships between SAS factors (LTO, T, RC) and SAS components (ES, IS) are considered, and the last model where the full set of 8 hypotheses is reflected. Given the testing result, the last model is comparable to the first one, however, the PNFI (parsimonious normed-fit)

index, used for model comparison is slightly better than for the last model as well as other coefficients (χ^2, χ^2 normed, RMSEA). PNFI is a goodness-of-fit index, ranging from 0 to 1, therefore, the higher the value of it, the better the model fits the data (Mulaik et al, 1989).

Summarizing on the Table 3.14, it can be concluded that the model with a full set of hypotheses is overall reflective of the data used for analysis. For the Amos output with factor loadings, see Appendix 7.

Following the logic of CFA, *construct validity* should be assessed to ensure that the results of the SM are reliable. AVE, CR were assessed for the final model as it is the model that incorporates all the hypotheses meant to be tested (see Table 3.15 for results). DV is not assessed as all the covariances among constructs in the model are substituted with causal relationships. Overall, results are consistent with MM assessment with CFA and indicate adequate validity and reliability.

Table 3.15. AVE, CR for SM

Construct	**AVE**	**CR**
ES	0.59	0.85
IS	0.49	0.82
RC	0.60	0.77
T	0.64	0.88
LTO	0.60	0.90

3.4 Modeling results and analysis

Modeling results show that most, but not all of the specified relationships are statistically significant. However, only 2 relationships out of 8 have demonstrated statistical insignificance, therefore, it can be claimed that, overall, theoretical model adequately fits the data. Table 3.16 summarizes information on hypotheses, structural relationships, their magnitude and statistical significance.

Table 3.16. Modeling results. Path coefficients and their significance

Hypothesis	Structural relationship	Estimate
H1	Long-term orientation → External stability	0.433***
H2	Long-term orientation → Internal stability	0.025 (ns)
H3	Trust → Internal stability	0.355**
H4	Trust → Long-term orientation	0.609***
H5	Resource complementarity → External stability	0.056 (ns)
H6	Resource complementarity → Internal stability	0.377***
H7	Resource complementarity → Trust	0.450***
H8	External stability → Internal stability	0.171*

ns – not significant
**significantly different from zero at the 0,05 level (two-tailed)*
***significantly different from zero at the 0,01 level (two-tailed)*
****significantly different from zero at the 0,001 level (two-tailed)*

All the significant effects of SAS determinants on both SAS components correspond to theoretical assumptions. SEM has shown that SAS determinants have different effects on the components of SAS. More specifically, *Trust* and *Resource complementarity* have a direct positive effect on *Internal* SAS, the effect of *Resource Complementarity* on *External stability* is indirect and minor (see Table 3.18), while *Long-term orientation* is the only significant and direct determinant of *External stability*. These results partially correspond to findings revealed by previous studies. Speaking of *Trust* and *Resource complementarity* effects on *Internal stability*, results of an empirical test go in line with findings by Deitz et al (2010) that find a direct and significant effect of *Resource complementarity* on the intent to stay within a joint venture as well as partner commitment. It has also been proven by the same authors that *Trust* is positively associated with commitment. However, authors find marginal support for the causal relationship between *Trust* and commitment. Clearly, there is a difference in stability conceptualization chosen in this paper and in the paper by Deitz et al (2010). As it has been discussed in sub-chapter 1.5, the term "commitment" used by authors is similar to "motivational stability" term used in this paper, while "intern to remain in a joint venture" better matches the concept of "strategic stability" (see the definition in sub-chapter 1.4). Therefore, there is a rationale to assume that different components within *Internal stability* (see Figure 1.1) are affected differently by *Trust*, however, *Internal stability* overall is positively affected by it.

Contrary to the expected results predicted by theory, *Resource complementarity* did not manifest a significant effect on *External stability*, which contradicts the assumptions of R-A theory used for factor selection (Lambe, Spekman and Hunt, 2002; Hunt, Lambe and Wittmann, 2002). This finding might indicate that in case multiple SAS components are taken into consideration, the effect of *Resource complementarity* on *Internal stability* prevails. At the same time, regarding

External and *Internal* stability components in separate models is not logical as it is required that both components are present for an alliance to be overall stable (Zenkevich, Koroleva, Mamedova, 2014a,b).

The effect of *Long-term orientation* has proven to be positive and significant in relation to *External stability*, which supports theoretical assumptions put forward in sub-chapter 2.1. At the same time, the effect of *Long-term orientation* on *Internal stability* has been found insignificant in the examined model. Contrary to this result, López-Navarro, Callarisa-Fiol & Moliner-Tena, (2013) find a significant and positive relationship between *Long-term orientation* and partner commitment in export joint ventures. The discrepancy in finding might result, firstly, from difference in sampling. In particular, the current study addressed all alliance types, while the abovementioned research focuses exclusively on export JVs. Secondly, the discrepancy in findings might stem from differences in conceptualization of the outcome variable. As it has been mentioned for (Deitz et al, 2010), the term "commitment" is most closely related to "motivational stability", which constitutes one part of *Internal stability*. Therefore, there is an implication for further research that *Long-term orientation* can be regarded as a factor of one of the *Internal stability* components, e.g., motivational stability. Thirdly, it can be claimed, that the effect of *Long-term orientation* on *External stability* prevails in the model, and makes the effect of *Long-term orientation* on *Internal stability* statistically insignificant. Although, as it was already mentioned, considering *External* and *Internal stability* as outcome variables in separate models does not make sense.

Speaking of the relationships among SAS factors hypothesized in sub-chapter 2.1, the study has found support for both. López-Navarro, Callarisa-Fiol & Moliner-Tena, (2013) have found that *Resource complementarity* is positively and significantly associated with *Trust*. This result corresponds to the findings on the association between *Resource complementarity* and *Trust* demonstrated in the current paper (see Table 3.17). Moreover, Deitz et al (2010) have found that there is a partial mediation by *Trust* between *Resource complementarity* and intent to remain in an alliance. The same result has been obtained for *Trust, Resource complementarity* and *Internal stability* examined in the current paper (see Table 3.18). Moreover, López-Navarro, Callarisa-Fiol & Moliner-Tena, (2013) find a significant and positive relationship between *Trust* and *Long-term* orientation, which corresponds to the findings in this paper (see Table 3.17).

The positive and significant effect of *External stability* on *Internal stability* has been identified, as predicted by theory. This finding also corresponds to results provided in the paper by Fu, Lin, Sun (2013) who have found a positive and significant effect of the increase in economic

results of alliance activities, namely, the income increase, on SAS. However, in the current study, the effect of *External stability* on *Internal stability* is not as strong as the influence of other determinants on particular components of stability.

For research hypotheses testing summary, refer to the Table 3.17.

Table 3.17. Hypotheses test results

Hyp.	Hypothesis formulation	St.est.	Result
H1	*Long-term orientation is positively associated with external stability of a strategic alliance*	0.433***	Supported
H2	*Long-term orientation is positively associated with internal stability of a strategic alliance*	0.025 (ns)	N/A
H3	*Trust is positively associated with internal stability of a strategic alliance*	0.355**	Supported
H4	*Trust is positively associated with long-term orientation in a strategic alliance*	0.609***	Supported
H5	*Resource complementarity is positively associated with external stability of a strategic alliance*	0.056 (ns)	N/A
H6	*Resource complementarity is positively associated with internal stability of a strategic alliance*	0.377***	Supported
H7	*Resource complementarity is positively associated with partners' trust*	0.450***	Supported
H8	*External stability is positively associated with internal stability*	0.171*	Supported

ns – not significant
**significantly different from zero at the 0,05 level (two-tailed)*
***significantly different from zero at the 0,01 level (two-tailed)*
****significantly different from zero at the 0,001 level (two-tailed)*

Structural equation modeling results for the model are depicted in the Figure 3.3 to make a set of interrelations between constructs more comprehensive.

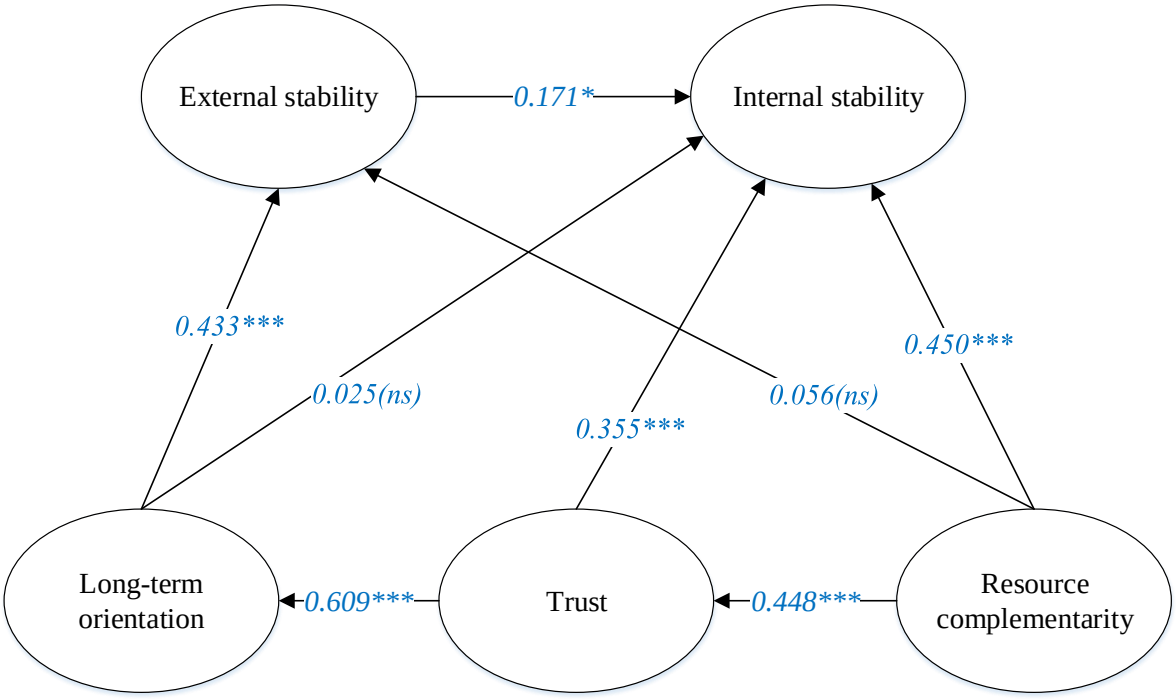


Figure 3.2. SEM final results. Dependence paths

Considering the fact that direct and indirect effect of each SAS determinant can be identified, direct and indirect effect for each construct have been calculated in relation to ES and IS based on the data used for analysis. To differentiate among different effects, 4 models have been tested (each following model includes all the paths of the previous model plus one new path, see sub-chapter 2.1): SM with direct effects between SAS factors and SAS components; SM with an additional path *External stability* → *Internal stability*; SM with an additional path (*Resource complementarity*→*Trust*); SM with an additional path (*Trust*→*Long-term orientation*). Next, the analysis of direct and indirect effects has been made based on significant paths. See Table 3.18 for the reference.

By comparing direct effects in all 4 models in Table 3.18, it can be argued that all the path coefficients estimates remain approximately the same compared in models with different numbers of causal relationships. This implies consistency in results for all the models.

Table 3.18. Direct and indirect effects. SMs comparison

Model	Path(s) (significant)	Direct/Indirect significant effect	Conclusion
SEM (direct effects)	LTO → ES	0.432***	LTO has a positive direct effect on ES
	T→ IS	0. 377***	T has a positive direct effect on IS
	RC → IS	0.379***	RC has a positive direct effect on IS
SEM (ES → IS)	LTO → ES	0.435***	LTO has a positive direct effect on ES
	T→ IS	0.358***	T has a positive direct effect on IS
	RC → IS	0.379***	RC has a positive direct effect on IS
	ES → IS	0.173*	ES has a positive direct effect on IS
	LTO → ES → IS	0.435 × 0.173 = 0.075	LTO has a minor indirect positive effect on IS through ES
SM (ES → IS, RC → T)	LTO → ES	0.420***	LTO has a positive direct effect on ES
	T→ IS	0.339***	T has a positive direct effect on IS
	RC → IS	0.390***	RC has a positive direct effect on IS
	ES → IS	0.173*	ES has a positive direct effect on IS
	RC → T	0.478***	RC has a positive direct effect on T
	RC → T → IS	0.478 × 0.339 = 0.162	RC has a positive indirect effect on T T is a *mediator* for RC and IS
	LTO → ES → IS	0.420 × 0.173 = 0.073	LTO has a minor indirect positive effect on IS through ES
SM (ES → IS, RC → T, T → LTO)	LTO → ES	0.433***	LTO has a *positive direct* effect on ES
	T→ IS	0.355***	T has a *positive direct* effect on IS
	RC → IS	0.377***	RC has a *positive direct* effect on IS
	ES → IS	0.171*	ES has a *positive direct* effect on IS
	RC → T	0.450***	RC has a *positive direct* effect on T
	RC → T → IS	0.450 × 0.355 = 0.160	RC has a *positive indirect* effect on T T is a *partial mediator* for RC and IS
	LTO → ES → IS	0.433 × 0.171 = 0.074	LTO has a *minor indirect positive* effect on IS through ES
	T → LTO	0.609***	T has a *positive direct* effect on LTO
	T → LTO → ES	0.609 × 0.433 = 0.264	T has an *positive indirect* effect on ES through LTO
	T → LTO → ES → IS	0.609 × 0.433 × 0.171 = 0.045	T has a *minor indirect* effect on IS through the path LTO → ES
	RC → T → LTO → ES	0.450 × 0.609 × 0.433 = 0.119	RC has an *positive indirect* effect on ES through the path T → LTO
	RC → T → LTO → ES → IS	0.450 × 0.609 × 0.433 × 0.171 = 0.020	RC has a *minor positive indirect* effect on IS through the chain T → LTO → ES
	RC → T → LTO	0.450 × 0.609 = 0.274	RC has a *positive indirect* effect on LTO through T

In the final model with the maximum possible number of effects (hypotheses 1-8), derived from theory and tested with SEM, there are a total of 6 direct and 7 indirect effects that can be identified on a basis of significant path coefficients. Out of indirect effects, one is the indirect relationship between SAS factors (RC → T → LTO), one is a mediation effect (T is a partial mediator for RC and IS). Full mediation implies that in a presence of a mediator a direct relationship between dependent and independent constructs becomes insignificant, while partial mediation implies that a direct effect between the independent and dependent variables remains significant after the mediator is introduced into the relationship (Hair, 2010). 6 indirect effects out of 7 are on ES or IS.

Other effects enable relationships between SAS factors and SAS components, however, 3 out of these effects are minor. The common trait of these 3 effects is that they are indirect and involve the path ES → IS, namely, LTO → ES → IS, T → LTO → ES → IS, RC → T → LTO → ES → IS. Therefore, it can be concluded that the main effects on IS are created through shorter path chains (both, direct and indirect), namely, directly through RC → IS, T → IS, ES → IS, and indirectly through RC → T → IS. In turn, ES is most significantly influenced by LTO, and through LTO by both T and RC.

3.5 Chapter 3 concluding remarks

In Chapter 3, the empirical part of the study has been described in details. The two-step structural equation modeling procedure has been performed based on the conceptual model derived from theory using the data collected, as described in Chapter 2 (for reference, see sub-chapter 2.1 and subchapter 2.2 respectively).

The first step of SEM involves measurement model assessment (overall model fit, construct validity and reliability) via confirmatory factor analysis and AVE, CR, DV calculation. The measurement model itself was developed from other studies by adapting the measures for SA context. After the initial model assessment, model respecifications were required. After the respecification, the measurement model has shown an adequate fit to empirical data. Factor reliability and validity have also proven to be adequate.

The second step of SEM requires structural equation model test, which was conducted in Chapter 3. The test for SM follows the same steps done for MM assessment during the CFA. In order to differentiate indirect and direct effects and conduct a deeper analysis of path coefficients and effects within the model, 4 SM tests have been conducted: for SM only with direct relationships between SAS factors and SAS components; with an added path ES → IS, with an

added path RC → T; with an added path T → LTO. On a basis of this analysis, 6 direct and 7 indirect effects on *External* and *Internal stability* have been identified.

In case SAS was a homogenous phenomena, it would be expected that all the relationships between SAS factors and SAS different components would be the same. However, empirical results have shown that this is not so. Speaking of direct relationships, the significant determinant of *External* SAS appeared to be partners' *Long-term orientation*, while *Trust*, *Resource complementarity* and *External stability* directly influence *Internal stability*. Moreover, *External stability* influences *Internal stability* to a lesser extent than *Trust* and *Resource complementarity*. Speaking of indirect effects, *Trust* appeared to play a partial mediator role between *Resource complementarity* and *Internal stability* channeling a part of the effect of the former on the latter. Otherwise, effects of *Resource complementarity*, *Trust* and *Long-term orientation* through *External stability* are negligible. At the same time, the indirect effects of *Trust* and *Resource complementarity* on *External stability* through the sequence of relationships RC → T → LTO → ES are worth considering.

CONCLUSION AND IMPLICATIONS

Research goal and objectives. During this study, the research goal, formulated in the Introduction, was reached through covering research objectives, also stated in the Introduction part. During the research, a set of relationships between strategic alliance stability and inter-organizational SAS factors were identified. This goal was attained by (1) defining the term of strategic alliance stability as a result of extensive literature analysis, then (2) developing a conceptual model of strategic alliance stability factors and (3) conducting an empirical study to test relationships between SAS factors and stability components in order to make conclusions about these relationships.

Answers to research questions. The study was aimed at answering two research questions in order to fulfill research objectives. The empirical study has provided answers to them.

RQ1: What are the relationships between strategic alliance stability inter-organizational factors and different components of strategic alliance stability?

The research has provided insights for the issue of SAS factors. The study has differentiated between two stability components: external and internal stability, which corresponds to the game theory strategic alliance conceptualization and seems to be an all-inclusive approach. A number of SAS determinants were chosen from previous academic studies, both conceptual and empirical, for further analysis. The approach chosen to define SAS factors was R-A theory as the most integrative approach to SAS factors. Factors included trust and long-term orientation and resource complementarity.

Speaking of direct relationships, results for external stability have shown that long-term orientation of partners plays an important role in defining external SAS, while resource complementarity is an insignificant factor. However, results for internal SAS differ: long-term orientation becomes an insignificant factor, while trust and resource complementarity appear have a significant and positive effect on internal stability. This difference in results contradicts to theoretically hypothesized relationships and is likely to occur in the presence of both internal and external stability present the model, as each additional construct might change the set of significant relationships (Hair, 2010). At the same time, the presence if both, internal and external stability, has to be considered in the SAS factors model as all the stability components have to be present in order for an alliance to be overall stable (Zenkevich, Koroleva, Mamedova, 2014a).

Moreover, there is a significant causal relationship between external stability and internal stability. Hence, it was empirically proven that SAS components are not independent from each

other. This finding is especially important in the light of SAS concept understanding and further practical applications, which are hindered by the concept current misspecifications, as described in Chapter 1.

RQ2: What are potential indirect effects of strategic alliance stability factors on different components of strategic alliance stability?

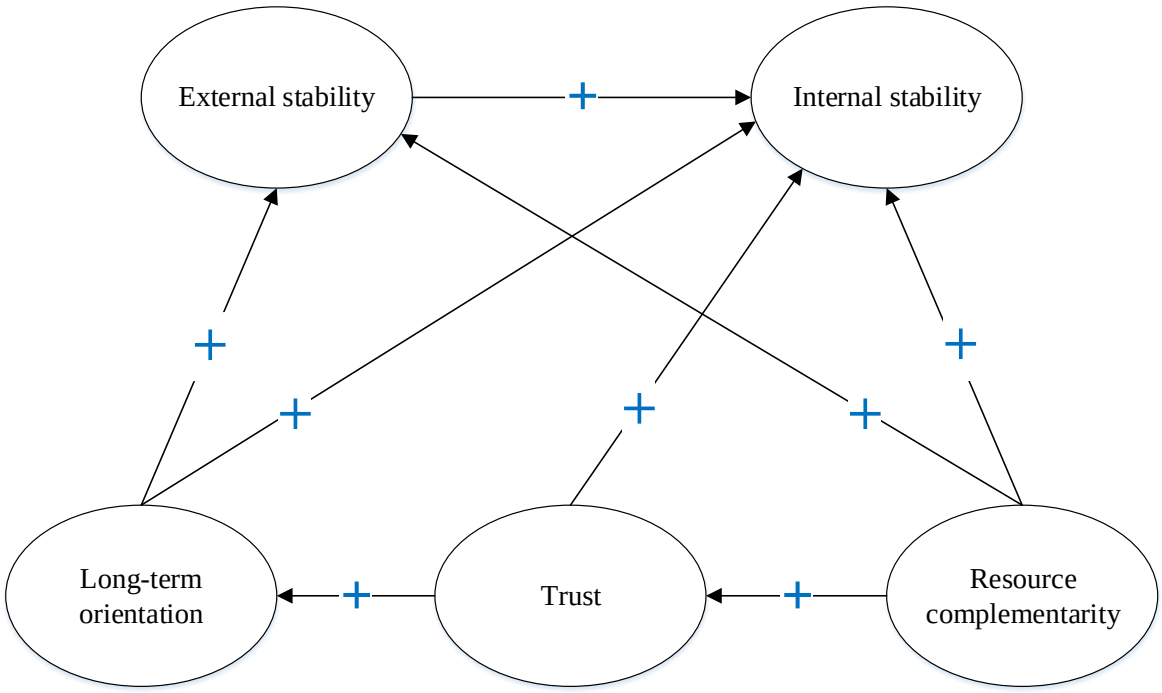
The study has shown that some of the SAS factors predicted by other scholars do not always have a direct effect on all the components of SAS. For example, resource complementarity does not directly influence external stability of SAs as well as long-term orientation does not directly influence internal SAS.

However, the set of relationships between different stability factors appeared to correspond to the expected ones and were found to be statistically significant. Therefore, a set of indirect effects was differentiated. As for external stability, resource complementarity and trust influence it indirectly through a set of causal relationships (resource complementarity → trust → long-term orientation → external stability). As for internal stability, resource complementarity being the most influential factor, influences it not only directly, but also indirectly through trust, where partial trust is a mediator for resource complementarity. However, the sequence of relationships resource complementarity → trust → long-term orientation → external stability → internal stability generates minor effects on internal stability for resource complementarity, trust and long-term orientation. At the same time, the set of relationships among constructs in the chain resource complementarity → trust → long-term orientation has proven its significance.

Theoretical contributions. As it has been mentioned previously and thoroughly discussed in Chapter 1, the concept of SAS remains largely unidentified and fragmented. Therefore, after a careful examination of academic literature, a dynamic and all-inclusive game theoretic approach to SAS definition and conceptualization was adopted from (Zenkevich, Koroleva, Mamedova, 2014a). Hence, SAS was regarded as a multi-dimensional phenomena (see Figure 1.1, Chapter 1). In particular, 2 stability components were considered in the focus of this study: internal stability and external stability of strategic alliances (see sub-chapter 1.4 for explanation).

Game theory approach to SAS conceptualization was merged with resource-advantage theory to examine the influence of particular inter-organizational factors on SAS. Based on recent studies by López-Navarro, Callarisa-Fiol and Moliner-Tena (2013) and Deitz et.al. (2010), the following SAS factors were chosen for further examination: resource complementarity, trust, long-

term orientation. As a result, the following conceptual model was put forward (see Figure C.1[1] below).



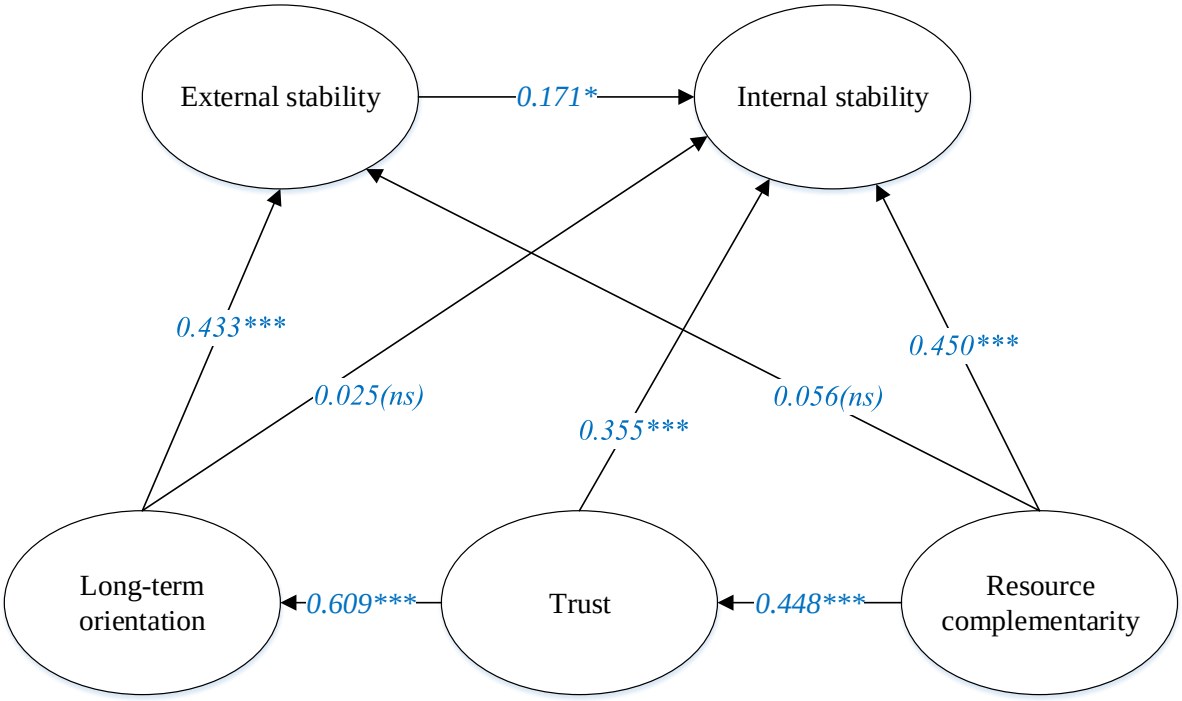
Note: the sign (+) denotes a positive causal relationship among constructs

Figure C.1. Conceptual model: strategic alliance stability factors

The model was tested by firstly considering direct relationships between SAS factors and SAS components, gradually introducing new relationships into the model and testing 3 interim and one final model (see sub-chapter 2.1). Figure C.2[2] represents results of a final empirical test. Results provided in this paper suggest that in case SAS stability is viewed as a multi-dimensional construct, different components of it are significantly determined by different factors (see Figure C.2). Therefore, an important theoretical contribution is that SAS is not a homogenous concept as it has been empirically proven that different parts of it are influenced by different factors.

Moreover, given a significant and positive relationship between external and internal stability, it can be claimed that strategic alliance stability components are not independent.

[1] Corresponds to the Figure 2.1.
[2] Corresponds to the Figure 3.2



Note:

**significantly different from zero at the 0,05 level*

***significantly different from zero at the 0,01 level*

****significantly different from zero at the 0,001 level*

Figure C.2. SEM final results. Dependence paths

Managerial implications. Given the fact that a more stable SA is likely to survive external turbulences and experience greater economic success, reaching its strategic goals, it is important to understand the mechanics behind SAS dynamics and use it for SAS management (Jiang, Li and Gao, 2008).

While SAS can be assessed using game theory approach by interpreting financial data along with inside expert estimations (Zenkevich, Koroleva, Mamedova, 2014b), SAS assessment would be incomplete without SAS management. Theoretical results provided in the paper suggest which inter-organizational factors could be altered in order to enhance external and internal stability of strategic alliances, given the importance of either component for the overall alliance stability.

Results provided in Figure C.2, suggest that direct determinants of internal SAS are trust and resource complementarity, considering that the latter has a greater effect on internal stability. Moreover, trust plays a mediating role in a relationship between resource complementarity and internal stability by interference. The only factor in the model affects external stability directly, which is long-term orientation. Contrary to expectations that scholars and management

practitioners might have, long-term orientation of partners does not directly and significantly affect internal stability of strategic alliances as well as resource complementarity does not directly affect external strategic alliance stability. It means that in practice managers who are willing to enhance the overall stability should manage different SAS factors simultaneously in order to reach a higher stability level.

While resources are often immobile and it might not be feasible to enhance resource complementarity during the implementation stage of an alliance, it seems reasonable to enhance trust among partners and pay closer attention to relationship management. This could include building communication channels and facilitating communication overall, managing cultural distance in terms of national, professional and organizational cultures, etc. (Elmuti, Kathawala, 2001). Then, given that resource complementarity is one of the criterion for partner selection in many alliances, partners should pay close attention to resource complementarity as it does not only play role at a formation stage of an alliance, but also affects SAS on the implementation stage.

Moreover, it has been found that the effect of the trend of economic results (external stability) on internal stability is not as strong as the effect of such determinants as trust and resource complementarity. Therefore, relational factors, often disregarded in strategic alliances (Agarwal, Croson, Mahoney, 2010) should be subject to constant monitoring during the implementation phase of an alliance.

LIMITATIONS AND FURTHER RESEARCH

The study is subject to some limitations that can be addressed further. The primary reason for most of limitations in this study is scarcity of data and difficulties connected with data collection. First, the research does not differentiate between different alliance types (e.g., equity, non-equity) because strategic alliances are not easily accessible for the outsider from the point of information collection, e.g., most alliances do not publish financial data and are restricted to provide sensitive information (Jiang, Li and Gao, 2008).

Second, given sample characteristics, study results can be best generalized for micro and small size European alliances, mainly in business service industry. However, some peculiarities can be found for larger alliances and alliances that operate in different fields. Therefore, results provided in the current study, should be applied in practice with a careful consideration of organizational and industrial conditions that an alliance operates with. The same issue can also be seen as a focus for further examination.

Third, given the fact that internal SAS consists of 3 components (dynamic, strategic, motivational stability; see Figure 1.1), an additional study on interrelationships among them and on their determinants can be considered further. Based on the mismatch between obtained results, expected findings and results provided in other empirical papers, there is a rationale to assume that, e.g., long-term orientation that did not exhibit a significant effect on internal stability overall, might have an effect on one of its components, most likely, on motivational stability. Similar conclusions can be made on the effects of resource complementarity on strategic and motivational stability, which might be different in each case.

Fourth, given current tools for SAS assessment (Zenkevich, Koroleva, Mamedova, 2014b), it is now possible to make conclusions on the presence of strategic alliance stability, however, stability level is still hardly quantifiable. Therefore, there is a vast potential for researchers to address the issue of a quantitative stability level assessment (e.g., developing stability indices).

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APPENDICES

Appendix 1: Survey Cover Letter

Dear Participant,

I am a graduate student at Graduate School of Management, Saint-Petersburg State University, Russia. The school is ranked as a number one business school in Eastern Europe by EdUniversal, and is listed among 60 best European business schools by Financial Times.

For my Master thesis, I am examining the issue of strategic alliances stability. I am inviting you to participate in my research by completing the survey. This study will contribute to the theory of strategic alliance management and will provide practical implications for both management of companies that are involved in strategic alliances and for strategic alliance managers. I am conducting the study under the supervision of Zenkevich Nikolay A., Candidate of Mathematical Science, Associate Professor, Deputy Chair of annual International Conference "Game Theory and Management".

The main assumption of the survey: you or your company have experience of dealing with strategic alliances, e.g. the company you are (were) working in is (was) involved in a strategic alliance as a partner who forms an alliance, or you personally work(ed) in a strategic alliance itself. At the same time, there is no specific requirement about the type of a strategic alliance.

The questionnaire will require from 15 to a maximum of 30 minutes to complete. Please, note that all the responses will be treated confidentially and reported only in form of entities. Nevertheless, in case you are interested in receiving results of this study, please, feel free to contact me on my email: st027633@student.spbu.ru.

http://www.surveygizmo.com/s3/2604128/Strategic-Alliances

Thank you for taking the time to assist me in my educational endeavors!

Kind regards,
Anastasiia Reusova

Section A: Alliance Profile

1. Select the country of your alliance operations

2. Which industry best describes the core activities of your strategic alliance

- Aerospace and Aircraft
- Business Services
- Chemicals and Allied Products
- Coal Mining
- Computer and Office Equipment
- Computer Integrated Systems Design
- Computers, Peripheral Equipment and Software
- Computer Processing and Data Preparation and Processing
- Drugs
- Electronic and Electrical Equipment
- Food and Kindred Products
- Health Services
- Investment and Commodity Firms, Dealers, Exchanges
- Machinery
- Measuring, Medical, Photo Equipment; Clocks
- Metal and Metal Products
- Oil and Gas Extraction
- Paper and Allied Products
- Petroleum Refining and Related Industries
- Prepackaged Software
- Public Administration
- Security Systems
- Telecommunications
- Textile Mill Products
- Transportation Equipment
- Transportation by Air
- Transportation and Shipping (except air)
- Wholesale Trade-Durable Goods
- Wholesale Trade-Nondurable Goods
- Other

3. What is the type of alliance you work in/have worked in

- Minority equity alliance (a member holds equity in the partner, or partners cross-hold equity in each other)
- Joint venture
- Non-equity alliance (does not involve any equity or the transfer of ownership)

4. Select how many full-time employees are involved in work with a strategic alliance in the organization (in case the alliance is not a Joint Venture)

- 1-9
- 10-49
- 50-249
- 250 or more

5. Select how many full-time employees work in the strategic alliance (if the alliance is a Joint Venture)[3]

- 1-9
- 10-49
- 50-249
- 250 or more

6. Estimate the period of alliance existence

- <1 year
- 1-3 years
- 3-5 years
- More than 5 years

7. Please, select the type of your alliance involvement

- Strategic alliance management team
- Partner (participant) company management team

[3] In case the alliance is not a Joint Venture, please, select the same option as for the previous question

- Employed by a strategic alliance (not management team)
- Employed by a company that participates in a strategic alliance (not management team)

8. Estimate for how long you have been involved into the alliance activities

- <3 years
- 3-5 years
- More than 5 years

Section B: Strategic Alliances Stability Indicators

Please evaluate the following statements about economic performance of your alliance (1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree):

9. Generally, there is a constant improvement in alliance's economic results (code: ES-1)

10. Most often, alliance meets its economic objectives (e.g., revenue, net profit, additional benefits generated for partner companies, etc.) (code: ES-2)

11. Overall, revenue trend of the alliance can be characterized as rising (code: ES-3)

12. Overall, net profit trend of the alliance can be characterized as rising (code: ES-4)

Please evaluate the following statements about participants' motivation, benefits sharing and cooperation in your alliance (1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree):

13. There is a well-established procedure of how benefits from the strategic alliance are shared among participants (code: IS-1)

14. There is a mutual understanding on how the benefits from the strategic alliance should be shared among alliance participants (code: IS-2)

15. Participants are absolutely satisfied with this form of cooperation compared to other possibilities (e.g., different forms of cooperation with other companies, such as other alliances) (code: IS-3)

16. Participants will continue cooperation in this alliance form until the termination date (code: IS-4)

17. Participants are involved in solving alliance issues (code: IS-5)

Section C: Stability Factors Indicators

Please evaluate the following statements about trust in your alliance (1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree):

18. Participants believe that another participant (other participants) is (are) honest (code: T-1)

19. Participants consider each others perspective (code: T-2)

20. Participants are always faithful (code: T-3)

21. Partners found it necessary to be cautious in dealing among themselves (code: T-4, reversed score)

22. Participant(s) are honest and truthful among themselves (T-5)

23. Participants interact with each other fairly and justly (T-6)

Please evaluate the following statements about participants' long-term orientation in your alliance (1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree):

24. Participants believe that over the long-run the alliance will be profitable (code: LTO-1)

25. Maintaining a long-term relationship among the participants is important for them (code: LTO-2)

26. Participants focus on long-term goals in this alliance (code: LTO-3)

27. Participants believe that any concessions they make to help out among them will even out in the long run (code: LTO-4)

28. Participants expect working together for a long time (code: LTO-5)

29. Participants are willing to make sacrifices to help out among them from time to time (code: LTO-6)

Please evaluate the following statements about resource complementarity[4] in your alliance[5] (1-Completely Disagree, 2-Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Agree, 7-Completely Agree):

30. Together, participants have been adding a substantial value to the alliance (code: RC-1)

31. Alliance participants bring to the table resources and competencies that complement those of other participants (code: RC-2)

32. Strategic fit between participants could not be better (code: RC-3)

33. All participants contribute different resources that help achieve their mutual goal (code: RC-4)

34. Participants have complementary strengths that are useful to their relationship (code: RC-5)

35. Each participant has separate abilities that, when combined together, enable them to achieve goals beyond their individual reach (code: RC-6)

[4] Resource complementarity - the degree to which the joint use of distinct sets of resources produces a higher total return than the sum of returns that could be achieved if each set of resources were utilized independently.

[5] Example: Nestle and Coca-Cola have entered a strategic alliance for cold tea distribution. Nestle owns an attractive product as a resource, Coca-Cola owns a well-developed distribution network as a complementary resource. In case they collaborate, they are likely to experience synergetic effects of this collaboration.

Latent construct: External stability

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ES-1	15,10	10,565	,706	,498	,800
ES-2	15,01	12,515	,551	,319	,861
ES-3	15,13	10,728	,734	,614	,788
ES-4	15,39	10,254	,766	,636	,773

Latent construct: Internal stability

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
IS-1	20,49	17,849	,396	,188	,791
IS-2	21,24	14,604	,509	,278	,765
IS-3	20,66	13,435	,684	,506	,701
IS-4	21,25	13,653	,620	,401	,725
IS-5	20,50	15,267	,622	,425	,728

Latent construct: Trust

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
T-1	23,41	22,810	,652	,503	,753
T-2	23,45	23,891	,636	,473	,760
T-3	24,08	21,434	,691	,646	,742
T-4	24,99	31,268	-,020	,044	,894
T-5	23,72	21,726	,772	,777	,726
T-6	23,58	21,320	,791	,707	,720

Latent construct: Long-term orientation

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LTO-1	27,06	23,220	,760	,664	,887
LTO-2	27,11	22,413	,825	,758	,877
LTO-3	27,45	22,309	,782	,637	,883
LTO-4	27,68	23,786	,688	,516	,897
LTO-5	27,22	22,950	,767	,602	,886
LTO-6	27,77	23,954	,632	,420	,906

Latent construct: Resource complementarity

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
RC-1	26,83	21,131	,488	,345	,844
RC-2	26,84	18,204	,761	,613	,796
RC-3	27,95	17,400	,552	,386	,846
RC-4	27,22	17,829	,703	,536	,805
RC-5	26,90	18,904	,692	,570	,809
RC-6	26,85	19,185	,630	,468	,820

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
ES1	<---	ExternalStability	1,000			
ES2	<---	ExternalStability	,710	,099	7,200	***
ES3	<---	ExternalStability	1,102	,102	10,853	***
ES4	<---	ExternalStability	1,169	,106	10,988	***
IS1	<---	InternalStability	1,000			
IS2	<---	InternalStability	1,216	,125	9,712	***
IS3	<---	InternalStability	,997	,121	8,248	***
IS4	<---	InternalStability	,839	,104	8,068	***
IS5	<---	InternalStability	,567	,092	6,177	***
LTO1	<---	LongtermOrientation	,898	,070	12,917	***
LTO2	<---	LongtermOrientation	1,000			
LTO3	<---	LongtermOrientation	,939	,070	13,441	***
LTO4	<---	LongtermOrientation	,786	,073	10,789	***
LTO5	<---	LongtermOrientation	,899	,067	13,394	***
LTO6	<---	LongtermOrientation	,799	,081	9,830	***
RC3	<---	ResourceComplementarity	1,000			
RC4	<---	ResourceComplementarity	1,141	,144	7,950	***
RC5	<---	ResourceComplementarity	,882	,118	7,494	***
RC6	<---	ResourceComplementarity	,819	,117	6,990	***
T1	<---	Trust	1,000			
T3	<---	Trust	,737	,086	8,609	***
T5	<---	Trust	1,116	,093	12,032	***
T6	<---	Trust	1,183	,094	12,526	***

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
ES1	<---	ExternalStability	,742
ES2	<---	ExternalStability	,569
ES3	<---	ExternalStability	,854
ES4	<---	ExternalStability	,872
IS1	<---	InternalStability	,703
IS2	<---	InternalStability	,849
IS3	<---	InternalStability	,685
IS4	<---	InternalStability	,679
IS5	<---	InternalStability	,523
LTO1	<---	LongtermOrientation	,792
LTO2	<---	LongtermOrientation	,875
LTO3	<---	LongtermOrientation	,811
LTO4	<---	LongtermOrientation	,703
LTO5	<---	LongtermOrientation	,808
LTO6	<---	LongtermOrientation	,662
RC1	<---	ResourceComplementarity	,566
RC2	<---	ResourceComplementarity	,812
RC3	<---	ResourceComplementarity	,601
RC4	<---	ResourceComplementarity	,771
RC5	<---	ResourceComplementarity	,779
RC6	<---	ResourceComplementarity	,705
T1	<---	Trust	,761
T2	<---	Trust	,761
T3	<---	Trust	,672
T4	<---	Trust	,742
T5	<---	Trust	,880
T6	<---	Trust	,893

Regression Weights: (Group number 1 - Default model)

			M.I.	Par Change
IS1	<---	T4	5,994	-,131
IS1	<---	T5	4,462	-,128
IS1	<---	T3	5,520	-,160
IS2	<---	LongtermOrientation	7,267	-,195
IS2	<---	T2	4,446	-,116
IS2	<---	LTO4	4,180	-,127
IS2	<---	LTO3	6,090	-,147
IS2	<---	LTO5	7,284	-,168
IS2	<---	LTO2	5,976	-,148
ES1	<---	InternalStability	4,875	,174
ES1	<---	Trust	6,010	,178
ES1	<---	IS4	9,740	,185
ES1	<---	IS3	4,868	,113
ES1	<---	LTO1	6,121	,156
ES1	<---	T6	4,184	,109
ES1	<---	T5	8,518	,158
ES1	<---	T1	6,349	,134
ES3	<---	IS2	4,715	-,092
ES3	<---	T1	4,674	-,095
ES4	<---	IS4	5,940	-,122
ES4	<---	LTO5	4,317	-,113
LTO1	<---	ResourceComplementarity	5,993	,168
LTO1	<---	ExternalStability	4,610	,133
LTO1	<---	RC2	7,296	,143
LTO1	<---	RC5	5,188	,124
LTO1	<---	ES3	4,786	,099
LTO1	<---	ES1	6,827	,113
LTO2	<---	Trust	4,151	-,101
LTO2	<---	T4	11,014	-,108
LTO2	<---	IS3	6,172	-,087

			M.I.	Par Change
LTO2	<---	T5	8,109	-,105
LTO5	<---	RC3	5,893	-,090
LTO5	<---	ES4	4,246	-,085
LTO6	<---	T4	8,155	,135
LTO6	<---	T2	4,321	,118
LTO6	<---	RC1	4,518	,160
LTO6	<---	IS4	5,322	-,136
LTO6	<---	T3	9,609	,187
IS5	<---	ResourceComplementarity	9,052	,261
IS5	<---	RC2	16,288	,271
IS5	<---	RC1	16,263	,307
IS5	<---	RC3	4,822	,108
IS5	<---	T3	4,374	,128
RC1	<---	LongtermOrientation	11,255	,213
RC1	<---	Trust	5,507	,144
RC1	<---	ExternalStability	9,365	,203
RC1	<---	RC2	4,368	,119
RC1	<---	IS5	8,583	,164
RC1	<---	T4	5,681	,096
RC1	<---	LTO4	4,081	,110
RC1	<---	LTO3	14,057	,196
RC1	<---	LTO1	4,578	,114
RC1	<---	LTO6	11,203	,168
RC1	<---	LTO5	11,697	,187
RC1	<---	LTO2	4,964	,118
RC1	<---	T3	6,646	,133
RC1	<---	T1	7,828	,126
RC1	<---	ES4	6,518	,119
RC1	<---	ES3	8,699	,143
RC1	<---	ES1	5,575	,109
RC2	<---	IS5	6,720	,129
RC2	<---	T4	8,996	-,107

			M.I.	Par Change
RC2	<---	RC1	10,690	,186
RC2	<---	IS3	8,171	-,109
RC2	<---	T6	4,017	-,080
RC3	<---	T4	8,936	,182
RC4	<---	Trust	5,786	,153
RC4	<---	T4	5,447	,098
RC4	<---	T2	5,257	,115
RC4	<---	RC1	5,589	-,158
RC4	<---	IS3	8,756	,133
RC4	<---	RC3	6,264	,108
RC4	<---	T6	5,727	,112
RC4	<---	T5	4,021	,095
RC4	<---	T3	5,024	,120
RC5	<---	RC3	4,266	-,077
RC5	<---	RC6	4,606	,109
RC5	<---	ES1	4,790	-,092
RC6	<---	LongtermOrientation	4,110	-,130
RC6	<---	T4	7,693	-,113
RC6	<---	LTO3	4,588	-,114
RC6	<---	T5	7,039	-,123
RC6	<---	T1	4,322	-,095
RC6	<---	ES1	5,010	-,105
IS3	<---	Trust	9,566	,258
IS3	<---	ExternalStability	4,605	,194
IS3	<---	T4	15,275	,214
IS3	<---	LTO5	5,992	,182
IS3	<---	T6	7,589	,169
IS3	<---	T5	11,003	,206
IS3	<---	T3	6,285	,176
IS3	<---	ES1	4,955	,140
IS4	<---	LongtermOrientation	4,454	,158
IS4	<---	LTO4	4,385	,134

			M.I.	Par Change
IS4	<---	LTO3	5,167	,140
IS4	<---	RC6	5,348	-,154
IS4	<---	LTO5	8,535	,188
IS4	<---	LTO2	4,187	,128
T1	<---	IS4	9,833	,181
T1	<---	RC3	9,425	-,147
T2	<---	LongtermOrientation	9,157	,205
T2	<---	LTO3	8,000	,158
T2	<---	LTO1	16,024	,229
T2	<---	LTO6	9,024	,161
T2	<---	LTO2	11,496	,193
T2	<---	T3	6,370	,139
T3	<---	T2	4,687	,118
T3	<---	LTO6	8,136	,160
T4	<---	RC2	7,747	-,209
T4	<---	IS1	5,192	-,131
T4	<---	RC6	7,375	-,202
T4	<---	LTO1	8,614	-,207
T4	<---	T5	5,106	,136
T4	<---	LTO2	8,299	-,202
T5	<---	T4	12,266	,128
T5	<---	T2	4,567	-,094
T5	<---	RC6	4,296	-,106
T5	<---	LTO2	6,092	-,119
T6	<---	RC6	6,411	,128

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
ES1	<---	ExternalStability	1,000			
ES2	<---	ExternalStability	,709	,099	7,175	***
ES3	<---	ExternalStability	1,106	,102	10,843	***
ES4	<---	ExternalStability	1,171	,107	10,966	***
IS1	<---	InternalStability	1,000			
IS2	<---	InternalStability	1,135	,115	9,852	***
IS3	<---	InternalStability	1,011	,127	7,968	***
IS4	<---	InternalStability	,795	,097	8,221	***
IS5	<---	InternalStability	,521	,086	6,058	***
LTO1	<---	LongtermOrientation	,873	,064	13,589	***
LTO2	<---	LongtermOrientation	1,000			
LTO3	<---	LongtermOrientation	1,001	,078	12,807	***
LTO4	<---	LongtermOrientation	,834	,080	10,481	***
LTO5	<---	LongtermOrientation	,955	,075	12,714	***
LTO6	<---	LongtermOrientation	,842	,088	9,534	***
RC3	<---	ResourceComplementarity	1,000			
RC4	<---	ResourceComplementarity	1,234	,155	7,963	***
RC5	<---	ResourceComplementarity	,770	,107	7,204	***
RC6	<---	ResourceComplementarity	,686	,107	6,419	***
T1	<---	Trust	1,000			
T3	<---	Trust	,738	,087	8,461	***
T5	<---	Trust	1,116	,093	11,963	***
T6	<---	Trust	1,181	,094	12,501	***

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
ES1	<---	ExternalStability	,741
ES2	<---	ExternalStability	,568
ES3	<---	ExternalStability	,855
ES4	<---	ExternalStability	,871
IS1	<---	InternalStability	,736
IS2	<---	InternalStability	,829
IS3	<---	InternalStability	,736
IS4	<---	InternalStability	,672
IS5	<---	InternalStability	,491
LTO1	<---	LongtermOrientation	,738
LTO2	<---	LongtermOrientation	,840
LTO3	<---	LongtermOrientation	,828
LTO4	<---	LongtermOrientation	,717
LTO5	<---	LongtermOrientation	,824
LTO6	<---	LongtermOrientation	,667
RC3	<---	ResourceComplementarity	,613
RC4	<---	ResourceComplementarity	,932
RC5	<---	ResourceComplementarity	,662
RC6	<---	ResourceComplementarity	,573
T1	<---	Trust	,765
T3	<---	Trust	,647
T5	<---	Trust	,867
T6	<---	Trust	,905

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
Trust	<---	ResourceComplementarity	,570	,113	5,071	***
LongtermOrientation	<---	Trust	,563	,078	7,184	***
ExternalStability	<---	LongtermOrientation	,437	,090	4,828	***
ExternalStability	<---	ResourceComplementarity	,066	,099	,670	,503
InternalStability	<---	Trust	,184	,058	3,193	,001
InternalStability	<---	LongtermOrientation	,014	,054	,260	,795
InternalStability	<---	ResourceComplementarity	,248	,064	3,858	***
InternalStability	<---	ExternalStability	,096	,046	2,093	,036
ES1	<---	ExternalStability	1,000			
ES2	<---	ExternalStability	,710	,100	7,129	***
ES3	<---	ExternalStability	1,114	,103	10,792	***
ES4	<---	ExternalStability	1,176	,108	10,886	***
IS1	<---	InternalStability	1,882	,308	6,110	***
IS2	<---	InternalStability	2,159	,330	6,532	***
IS3	<---	InternalStability	1,875	,309	6,065	***
IS5	<---	InternalStability	1,000			
LTO1	<---	LongtermOrientation	,874	,064	13,572	***
LTO2	<---	LongtermOrientation	1,000			
LTO3	<---	LongtermOrientation	1,005	,079	12,781	***
LTO4	<---	LongtermOrientation	,837	,080	10,465	***
LTO5	<---	LongtermOrientation	,958	,076	12,667	***
LTO6	<---	LongtermOrientation	,844	,089	9,505	***
RC2	<---	ResourceComplementarity	1,000			
RC4	<---	ResourceComplementarity	1,114	,113	9,867	***
RC5	<---	ResourceComplementarity	1,048	,100	10,521	***
RC6	<---	ResourceComplementarity	,968	,102	9,465	***
SS2	<---	InternalStability	1,506	,253	5,944	***
T1	<---	Trust	1,000			
T3	<---	Trust	,736	,087	8,498	***
T5	<---	Trust	1,106	,092	11,967	***
T6	<---	Trust	1,175	,094	12,560	***

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Trust	<---	ResourceComplementarity	,448
LongtermOrientation	<---	Trust	,603
ExternalStability	<---	Trust	,206
ExternalStability	<---	LongtermOrientation	,319
ExternalStability	<---	ResourceComplementarity	-,006
InternalStability	<---	ExternalStability	,168
InternalStability	<---	Trust	,350
InternalStability	<---	LongtermOrientation	,029
InternalStability	<---	ResourceComplementarity	,376
ES1	<---	ExternalStability	,741
ES2	<---	ExternalStability	,567
ES3	<---	ExternalStability	,855
ES4	<---	ExternalStability	,872
IS1	<---	InternalStability	,733
IS2	<---	InternalStability	,835
IS3	<---	InternalStability	,723
IS4	<---	InternalStability	,673
IS5	<---	InternalStability	,499
LTO1	<---	LongtermOrientation	,736
LTO2	<---	LongtermOrientation	,839
LTO3	<---	LongtermOrientation	,828
LTO4	<---	LongtermOrientation	,718
LTO5	<---	LongtermOrientation	,825
LTO6	<---	LongtermOrientation	,667
RC2	<---	ResourceComplementarity	,765
RC4	<---	ResourceComplementarity	,766
RC5	<---	ResourceComplementarity	,822
RC6	<---	ResourceComplementarity	,736
T1	<---	Trust	,768
T3	<---	Trust	,646
T5	<---	Trust	,865
T6	<---	Trust	,903