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Risk and Organizational Ambidexterity: A Meta-Synthesis of a Case Study and a Framework

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ABSTRACT

Organizational ambidexterity arises as an organization's ability to employ efforts on contradictory goals, such as exploration and exploitation for long-term success and long-lasting performance. In addition, the organization faces risks inherent in the management of its administrative capacity. However, to date, we did not find a systematic qualitative-research review on risk and organizational ambidexterity. This paper fills this gap by systematically reviewing existing qualitative case studies on risk and organizational ambidexterity published in peer-reviewed journals. To fulfill this objective, we used a meta-synthesis of qualitative synthesis case studies in order to identify possible cause and effect relationships between the constructs and to propose a theoretical model. The results showed that risk and uncertainty influence the way the organization invests resources in exploration or in exploitation. Second, the findings indicated that risk moderates the direct effect of exploration and exploitation on performance and on decision making, amplifying or reducing their effects. Third, the framework suggests that risk has a direct effect on organizational performance, reducing it, or influencing strategic decision-making (ranging from intuitive to rational decision).

KEYWORDS

Risk, Ambidexterity, Uncertainty, Meta-synthesis, Exploration, Exploitation

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1. INTRODUCTION

There are several studies on business risk (Baird & Thomas, 1985; Power et al., 2009; Hopkin, 2018) and multiple texts dealing with the subject of exploration, exploitation, capabilities and organizational ambidexterity (March, 1991; Benner & Tushman, 2003). Over time, the amount of research on these two constructs has generated a wide range of scientific knowledge that accumulates in the field of administration (Hoskisson, Chirico, Zyung & Gambeta, 2016; Zhou et al., 2016). However, little is known about how risk management and organizational ambidexterity can be associated, or even as they form a scientific knowledge that can be used in administrative practice, thus generating a gap for research.

Risk, in organizational studies, has several related definitions (Hopkin, 2018). One definition is that it can be understood as the degree of uncertainty of an organizational action (Zinn, 2017). Organizational ambidexterity, in turn, is defined as the capacity of the organization to act, equally, with two objectives which are incompatible or contradictory (Birkinshaw & Gupta, 2013). The association between both constructs is possible since the company, having two capacities (e.g. *exploration* and *exploitation*), which involve the organizational ambidexterity, can assume higher or lower levels of the risk of the operation and influence its performance.

Previous studies, which researched on risk and organizational ambidexterity, did not draw an association between them, leaving space for further research (see Table 1). For example, Zhou et al. (2016) investigated the impact of ambidexterity capabilities on product innovation performance and examined the moderating role of the CEO's preference for risk. The results showed that risk preference has a moderating role in two phases of product innovation in small and micro enterprises in China. Nevertheless, the article did not make it clear how risk relates to ambidexterity. Gurd and Helliar (2017) explored how leaders balance product creativity and innovation from the perspective of risk management. The findings showed a lack of awareness of the risk and that management is under the predominant responsibility of engineers. However, the authors did not study the ambidexterity element, pointing out ways to further research.

Although such attempts exist, two gaps remain unclear in the existing literature. First, given the existence of interpretive research conducted over the years (Kodama & Shibata, 2014; Yang & Gabrielsson, 2017; Malik, Pereira, & Tarba, 2017; Gurd & Helliar, 2017; Turner, Kutsch, & Leybourne, 2016; Tahar, Niemeyer, & Boutellier, 2011), we still lack a qualitative article that adds to existing knowledge and elaborates a model of synthesis that represents the phenomena under study. This possibility can be obtained through the Meta-Synthesis of Qualitative Studies.

Second, the accumulation of knowledge about risk and ambidexterity occurs due to multiple empirical studies and different perspectives of reality. Although we have isolated efforts, there is not a global, unified, and convergent view of the subject that suggests propositions for new studies (Hoon, 2013). Such propositions may be useful for testing with quantitative models and use of statistics to examine the phenomena of risk and ambidexterity. Faced with these problems and aiming to solve these two knowledge gaps, the Meta-Synthesis of Qualitative Studies is a possible solution.

The Meta-Synthesis of Qualitative Studies of the case study type offers a methodology of choice and procedures that seek to increase the predictive validity and practical use of the theory in administrative sciences (Hoon, 2013). Meta-Synthesis has been applied in several fields of knowledge, such as computer science (Douglas et al., 2008), public policy (Siau & Long, 2005), health care, (Mohammed, Moles & Chen, 2016) and learning (Strobel & Van Barneveld, 2009). However, with few exceptions found in the social sciences (Hoon, 2013; Vaz & Espejo, 2017; Magnin & Takahashi, 2017), and in the field of administration, its use is still recent.

With the intention of filling this gap, the objective of this article is to analyze and synthesize the causal relationships regarding the role of risk in the development of organizational ambidexterity and strategic decision-making, done via in qualitative case studies. In carrying out the meta-synthesis, this study makes several contributions: First, this paper contributes to the synthesis of more than two decades of qualitative case studies with a focus on risk and organizational ambidexterity. Second, through analytical processes, the study seeks to synthesize discrete parts of data into a chain of evidence that suggests a common causal scenario. Third, based on the identification of relations of causation, we suggest theoretical propositions for future empirical research. By identifying these possible relationships, the article shows how research involving risk and organizational ambidexterity, can continue in the future. Thus, the article aims to stimulate new research on ambidexterity and organizational risk and creates a solid base to further develop and design the research area, enabling a better understanding of risk and organizational ambidexterity in the context of decision-making.

In view of the above, after this introduction the text is organized as follows. The literature review chapter explains risk, ambidexterity, and decision-making. Following this, the methodology topic presents the procedures, review and inclusion criteria, and the sample of the case studies used in the meta-synthesis. In the next section, the results bring the global analysis gained from the interpretation of the information and offers six research propositions. Finally, the conclusions and suggestions for future research conclude the study.

Table 1

Comparison between selected sample – Effects of risk on organizational ambidexterity and decision making

	Organizational Ambidexterity				Decision Making			
Authors	Antecedent	Consequent	Moderator	Mediator	Antecedent	Consequent	Moderator	Mediator
Kodama and Shibata (2014)			X					
Yang and Gabrielsson (2017)	X				X			
Malik, Pereira and Tarba (2017)					X			
Gurd and Helliar (2017)	X							
Baskarada, Watson and Cromarty (2017)	X							
Turner, Kutsch and Leybourne (2016)					X			
Tahar, Niemeyer & Boutellier (2011)					X			

2. LITERATURE REVIEW

2.1. Risk

Risk is inherent in management and should be weighed by CEOs and managers in the decision-making process. However, when known to the organization, risk is something manageable that can be avoided or reduced. For Aven and Renn (2009, p. 2), risk refers to "uncertainty and severity of the consequences (or outcomes) of an activity in relation to something that individuals [or their institutions] value". Therefore, risk refers to the outcome being uncertain and unknown by the CEOs or managers of the company. The risk can be perceived subjectively by the manager or CEO of the company, which may impact or direct the decision making (Kahneman & Tversky, 1979). This occurs because, given the subjective perception, the administrator can make strategic decisions intuitively. On the other hand, risk can be objectively estimated (Freudenburg, 1993; Sjöberg, 2006). In the latter case, the risk estimated objectively via forecasting models tends to justify possible strategic decision-making in a rational way before the organization's board of directors (Damodaran, 2007).

The risk can be understood as the degree of uncertainty of the circumstance (Kodama & Shibata, 2014). The greater the degree of uncertainty attached to an environment, or even to a decision, the greater the possibility of failure that must be managed by the manager (Tuner, Kutsch, & Leybourne, 2016). In classical decision theory (Edwards, 1954), risk is more commonly conceived as uncertain variation "reflecting variation in the distribution of possible outcomes, their likelihoods, and their subjective values, being measured by variance of the probability distribution of possible gains and losses associated with a particular alternative" (March & Shapira, 1987, p.1404). Risk can be seen as a probability of aversion to an event or, from the perspective of phenomenological philosophy, subjective perceptions shaped by the social structure (Rosa, 1998) of elements of uncertainty.

As can be seen from the concepts presented, the definition of risk is quite broad in the literature. In order to systematize the risk construct, Table 2 presents a conceptual classification that divides the studies into four dimensions: being two as to the theoretical origin and two as to its measurement.

By analyzing the above table, we can see that the economic strand has dominated risk studies since its creation with Knight (1921). More recently the contingency and multidimensional slope opens the way to new studies when contemplating the human actor identifying the risk before taking their decisions.

In terms of possible risk-to-organizational relationships, Yang and Gabrielsson (2017) suggest that corporate risk may stem from market turbulence, technological turbulence, and internal firm

Table 2
Dimensions of Risk

		Theoretical Origin	
		Economic	Contingency
Measurement	One-dimensional	Bernstein, 2002; Damodaran, 2002; March & Shapira, 1987; Securato, 1993; Knight, 1921; Freudenburg, 1993; Sjöberg, 2006	Yates & Stone, 1992;Turban & Meredith, 1994; Aharoni, 1999;
	Mulidimensional	Jacoby & Kaplan, 1972; Miller, 1992; Galesne, Fensterseifer & Lamb, 1999; Ross, Westerfiled & Jaffe, 2002.	Aven and Renn, 2009; Bromiley & Rau, 2010

uncertainty. These three types of risk can influence how the organization focuses its resources and employs its capabilities (Yang & Gabrielsson, 2017). In other words, all three types of risk can impact investment decisions on exploration capacities or even exploitation capacities (Kodama & Shibata, 2014).

On the other hand, in making ambidextrous strategic decisions, the organization can implement controls and manage internal risk with managerial practices (Malik, Pereira, & Tarba, 2017). For example; controlling production risk, risk of new product design, or even employee activities, thereby managing and reducing internal risk. In these two examples, the effects of risk types on resource utilization decisions in exploration and exploitation activities may vary according to the risk appetite of the CEO (Baškarada, Watson, & Cromarty, 2017) and market uncertainty (Turner, Kutsch, & Leybourne, 2016). Nonetheless, because the risk, exploration and exploitation activities, and risk propensity of the CEO intertwine, it remains a mystery.

2.2. Organizational Ambidexterity

Organizational ambidexterity is based on studies that analyze the company through contradictory dualities such as efficiency and effectiveness, radical innovation and incremental innovation, exploration and exploitation, etc. (Duncan, 1976). Exploration refers to research, variation, experimentation, and discovery, while exploitation involves refinement, efficiency, selection, and implementation. Thus, ambidexterity is the organizational ability to pursue both exploration and exploitation (March, 1991), in order to achieve a balance between efforts and learning outcomes (Lackner et al., 2011). This balance between different forms of change is necessary for organizations to be effective (Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2004). As a research topic, it is relatively new but has been receiving contributions from several areas, such as organizational learning, innovation, strategic management, organizational design, and organizational adaptation (O'Reilly & Tushman, 2013; Cantarello, Martini & Nosella, 2012).

An organization that places too much focus on the exploration of resources may have difficulties adapting appropriately to environmental changes. On the other hand, too much focus on the exploitation of resources can generate a blockage of exploitation of new ideas, innovations, products and other processes (Junni et al., 2013). This can occur because there are resource constraints to contradictory demands, which creates a tension and a trade-off (Stadler, Rajwani, & Karaba, 2014). The literature points out that organizations, despite these challenges, can simultaneously follow both forms of exploitation, but they need organizational structures with strong team integration (Lavie, Stettner, & Tushman, 2010). In short, exploration and exploitation are not exclusive activities but are dependent on one another (Farjoun, 2010), and can be managed if the organization can balance stability and change.

Junni et al. (2013) conducted a meta-analysis of the organizational ambidexterity with 25 papers, searching a cumulative sample of 26,183 respondents. The main findings show that organizational ambidexterity influences organizational performance ($r = 0.06$), that most of the studies treated organizational ambidexterity as a multiplication of the dimensions of exploration and exploitation, and that, in the services sector, the relationship is much stronger (as compared to food, high-tech, and manufacturing). The study by Junni et al. (2013) did not consider how risk can interfere in the development of organizational performance, generating a research gap. Other studies have been carried out on organizational ambidexterity, relating it to human resources practices, learning and performance (Prieto & Santana, 2012), team trust and heterogeneity (Li, 2013), team integration (Fiset & Dostaler, 2013), manager and knowledge assets (Turner, Swart, & Maylor, 2013), merger and acquisition strategies (Lin, 2014), and ambidextrous

organizational culture (Wang & Rafiq, 2014). However, none of these studies focused on the relationship between organizational ambidexterity and risk.

In this paper, we suggest that entrepreneurial risk is an element that not only predicts how the company will employ its capabilities in exploration and exploitation, but that risk also plays a moderating role in the relationship between ambidexterity and performance. In other words, when moderating the relationship, risk tends to harm the effects of one dimension of ambidexterity, while amplifying the effects of the other.

2.3. Decision Making – Rational and Intuitive

The framework of this paper suggests that exploration and exploitation capabilities, as well as risk, influence the managerial decision-making process (Eisenhardt & Zbaracki, 1992). We define decision making in two dimensions, being rational and intuitive (Dane & Pratt, 2007; Shrode & Brown, 1970).

Aligned with the multidimensional and contingent notion of risk, rational strategic decision-making takes into account cognitive and analytical elements that the manager ponders to make choices (Goll & Sambharya, 1998). In the rational strategic decision model, the key point is to gather clear and accurate, balanced, and compared information for decision making, in order to maximize positive results and minimize negative results (Kahneman & Tversky, 1979). Previous studies show how rational strategic decision making influences performance (Goll & Rasheed, 1997), but do not explain how risk can interfere or mediate such a process.

Intuitive strategic decision making is also known as emerging (Kaufmann, Meschnig & Reimann, 2014). This process takes into account elements of the economic moment, the company's transition capabilities, the circumstance of the external scenario, and other elements that change daily (Burke & Miller, 1999). In the intuitive strategic decision model, the key point is to make the decision quickly and based on ~~the~~ demands (Andersen, 2000). Rapid decision making takes into account changes that were not strategically weighted or other actions that occurred suddenly, such as a new competitor, a new technology product, a change of government law, etc. (Patton, 2003).

3. METHODOLOGY

3.1. Meta-Synthesis of Qualitative Studies

The Meta-Synthesis of Qualitative Studies is based on the study by Noblit and Hare (1988). Noblit and Hare (1988) attempted to generalize ethnographic studies. The central focus was to create criteria to be used in the comparison of interpretative research of the qualitative type. The meta-ethnography by Noblit and Hare (1988) provided useful advice from comparative and cumulative qualitative data analyzes. Noblit and Hare (1988) showed that the ethnographies themselves are interpretive acts and demonstrated that by translating metaphors and key concepts into ethnographic studies, it became possible to develop a broader interpretive synthesis. Atkins et al. (2008) proposed seven steps in the synthesis process of qualitative research on the treatment of tuberculosis. After these studies, the Meta-Synthesis of Qualitative Studies has been gaining ground as a research methodology (Pope, Mays, & Popay, 2007; Hannes & Lockwood, 2011). Currently, the meta-synthesis is applied in several fields of knowledge such as computer science (Douglas et al., 2008), public policies (Siau & Long, 2005), health care (Mohammed, Chen 2016) and learning (Strobel, & Van Barneveld, 2009).

The meta-synthesis seeks to integrate and synthesize the qualitative data reported and provide an abstract figure that deals with the association of findings (Mohammed, Moles, & Chen, 2016).

The basis for inserting articles into the meta-synthesis is the integration, not the comparison or critique (Sandelowski & Barroso, 2006), of interrelated qualitative studies (Walsh & Downe, 2005). Therefore, the researcher must look for interrelated works that will be the database to form or revise a theory.

The Meta-Synthesis of Qualitative Studies is different from the meta-analysis, since the former seeks data from qualitative studies with information being the insight generated, generating a conceptual framework through insight of the multifaceted interpretive results of the published papers. The meta-analysis looks for data from quantitative studies (e.g. tests F, Z, t) and the information is the effect-size (Glass, Smith, & McGaw, 1981).

Meta-studies, also known as analysis of the analysis, have different classifications and purposes and cannot be seen as synonyms. For example, the meta-analysis is intended to generate a global average effect between the effects found in the studies (Glass, Smith, & McGaw, 1981). The systematic meta-review seeks to bring together different studies and draw a common line linking them (Mohammed, Moles, & Chen, 2016). The meta-synthesis "refers to the accumulation of primary evidence with the purpose to generate interpretive explanation rather than prediction, [...] identify categories and patterns that engage across the studies" (Hoon, 2013, p.526). We present the definition of the theoretical constructs used in this research in Table 3.

In this work, we used the meta-synthesis of case studies as a tool to analyze the relationship between risk and ambidexterity inherent in ~~of~~ studies that performed only the case study method. This methodology is being applied in studies in the area of management, specifically with constructs as dynamic capacities (Hoon, 2013), trust and management control system (Vaz & Espejo, 2017), social innovation (Morais-da-Silva, Takahashi, & Segato, 2016) and scientific productivity (Magnin & Takahashi, 2017).

3.2. Meta-Synthesis Protocol

The protocol used for execution is based on Hoon (2013) and suggested by Templier and Paré (2015), composed of eight steps: (1) elaboration of the research question; (2) location and selection of relevant papers; (3) sample inclusion / exclusion criterion; (4) extraction and coding of the sample data; (5) analysis at the individual level of the case study; (6) synthesis at the level of case studies; (7) construction of theory and (8) discussion of the findings.

First, the question of research was elaborated as, "what is the role of risk in the development of organizational ambidexterity and strategic decision making?" In order to answer this question, we conducted a research with several academic publications in the main scientific databases, ranging between 1991 and 2017.

Second, we sought to select the sample by identifying relevant risk publications and organizational ambidexterity, following the recommendations by Hoon (2013). An exhaustive search of published literature helped prevent the exclusion of important information. The use of search strings in the title, abstract, and keywords were: *risk* AND *ambidext**; *uncertaint** AND *ambidext**, and *risk* AND *exploration* AND *exploitation*. Therefore, the three forms of research, during the period ranging from 1991 to 2017, were employed in 3 different places of the search. The three databases used were Scopus, EBSCO and Web of Science. The year 1991 was chosen as the initial point of search because this was the year in which March (1991) developed an argument and established theoretical foundations for the development of organizational ambidexterity with the dualities of exploration and exploitation. The search resulted in 51 contributions published in international and national journals and conferences, as presented in Appendix A.

Table 3
Definition of Constructs

Main Construct	Definition	Secondary Construct	Definition
Organizational Ambidexterity	It is the ability of an organization to address, also, two incompatible or contradictory objectives (Birkinshaw, 2013; March, 1991).	Exploration	These are activities of innovation that go beyond the core competencies of the organization. Involve search, variation, risk-taking, experimentation, play, flexibility, discovery, innovation (March, 1991; Raisch et al., 2009).
		Exploitation	It is the ability of the organization to keep the company aligned and efficient in managing current business demands (March, 1991; Raisch & Birkinshaw, 2008). The activities that are usually involved are: continuous improvement, benchmarking and business process reengineering.
Risk	Refers to the uncertainty and severity of the consequences (or results) of an activity in relation to something that individuals [or their institutions] value (Aven and Renn, 2009, p.2)		
Decision-Making	It is the result of how an organization or individual manages the relationship between the interaction of an organization and its environment. They are associated with different trade-offs and risks and are interrelated with other previous and / or subsequent decisions (Elbana, 2006).	Rational	It is when decision-making is carried out as controlled and analytical processes, based on rules, sequences, require a great effort, and are slow and rigorously formalized in organizations (Evans, 2008; Hodgkinson et al., 2009).
		Intuitive	It is based on a cognitive conclusion based on previous experiences and the emotional aspirations of a decision-maker (Burke & Miller, 1999; Kaufmann, Meschnig & Reimann, 2015).

Third, we defined and applied the inclusion and exclusion criteria of the sample to determine which studies to include in terms of method, theoretical basis, relation to the research question, and quality of the case study performed. After obtaining the complete versions of the texts, two screenings for the sample selection were fulfilled. The first screening focused on the titles and abstracts in 9 articles as conceptualized and theoretical and 23 articles as studies that used quantitative methods and techniques and thus were excluded from the sample (n = 32). After excluding these texts, the sample consisted of 19 articles that deal exclusively with qualitative case studies that had as reference the subjects of risk and organizational ambidexterity. The second screening was aimed at examining in detail each of the 19 case studies, such as: (i) studies that presented the relationship between risk constructs and organizational ambidexterity and not focused on only one of them, (ii) Case studies that demonstrate a level of research quality, following the suggestion by Eisenhardt (1989), and (iii) studies that did not use the case study

as an illustration only. After this second screening, we eliminated 11 articles from the sample, which was composed in the end by 8 articles of qualitative case studies.

Fourth, we performed an integral reading of the selected articles with the objective of extracting the data and elaborating the codifications of the characteristics and possible relations to be established with the theory. The result of this step generated a database of information and reading insights encoding. The coding was adapted from Hoon (2013) and used by Morais-da-Silva, Takahashi and Segato (2016). The database contained 42 coding criteria, among them: study type, study objective, research question, contribution, how the risk is conceptualized, how ambidexterity organizational is conceptualized, how the study is related to risk research, how the study is related to ambidexterity research, country, industry, research context (discontinuous environment or disruptive change), type of organization selected, research configuration, research design, approach, unit of analysis, focal process, number of cases included, sampling strategy, time and sequence of data collection, data collection techniques used by the researcher, sources of data (e.g. transcripts, field notes, data file), amount of validated data (e.g. number of interviews, amount of documents), data management techniques (e.g. historical case), data analysis method (e.g. visual presentation), key findings, events, factors or patterns in risk management, effects on organizational ambidexterity, environmental conditions, contributions to the field of risk management, etc.

Fifth, we performed a causal network analysis at a specific case level aiming at identifying cause and effect relationships in each case studied, intra-case relations and identification of central themes or elements. For Miles, Habermas and Saldaña (2014, p. 211) "a causal network builds a progressively integrated map of case phenomena and, for multiple cases, aligns their maps to make a cross-case map that contains more generalizable causal explanations". In this step, the authors sought, in an abstract and inferential way, to display and organize the relationships between the risk variables and organizational ambidexterity, of the selected sample, in a coherent way. Hoon (2013, p.538) suggests the use of the causal network as a way to synthesize case studies by allowing researchers to find "variables that go together and contrast with other variables", providing a close look at new themes or patterns. In the causal network analysis, intra-cases, two steps were followed, as suggested by Miles, Habermas and Saldaña (2014): (i) formation of the causal fragments, which sought to gather fragments of the case study, without necessarily connecting them; and (ii) the fragments were assembled by means of the previous reading of the constructs and analytical processes, which sought to synthesize discrete parts of the data in a chain of evidence, suggesting causation with the directionality and classification of the relationship between the variables.

Sixth, a cross-sectional synthesis was performed with intra-case relations for meta-case relations. The objective was to analyze the constituent elements from the cross-cases to the construction of a general pattern among the variables and the establishment of relations between the cases (meta-causal network). Miles, Habermas and Saldaña (2014, p.220) argue that the causal network analysis between cases "is a powerful way to move from case-specific explanations to more generalizable constructs and theory". In this step, we performed the combination of networks causes of specific cases, searching for patterns replicated in other cases that suggest a common scenario.

Seventh, we made the framework proposition from the causal network analysis within and between cases, tailoring the elements that explain the interdependence between organizational ambidexterity and risk. At this point, the goal is to establish the theoretical links, the scientific explanations and the fundamental elements for advancement in the mainstream research. Eighth, we performed a discussion of the results of the meta-synthesis study and potential limitations based on accuracy, reliability and validity.

4. RESULTS

4.1. Search by Relevant Search

After researching the main concepts related to ambidexterity and risk in the Scopus, EBSCO and Web of Science databases, we found a sample of 51 articles published in 45 journals from various areas of knowledge (Table 4). The studies deal with diverse subjects and varied areas of Applied Social Science in the period from 1991 to 2017. The H index of the respective journal is according to Scimago Journal & Country Rank. Some journals do not have an H-index and are classified as not available ("–").

4.2. Exclusion and Inclusion Criteria

The main criterion for the exclusion of the case study is the lack of interaction / integration of the risk with the organizational ambidexterity. If the text contained elements of only one of the two constructs without the relation, one proceeded for exclusion (see Table 5). The second criterion for exclusion is the lack of use of the case study as a qualitative methodology. Therefore, we discarded quantitative research such as that by Zhou et al. (2016). The third criterion for exclusion is the interaction of risk with ambidexterity in a theoretical / conceptual way as in the text by Makarevich (2017), the study was not used, because our focus is the empirical data. After exclusion of non-relevant texts that did not show a relationship with the research question of this study, the final sample consisted of 7 articles from qualitative case studies.

4.3. Extraction and encoding of data

For the codification of the data, the coding form of Hoon (2013). The coding form encompasses 42 elements such as theoretical framing (e.g. concept, understanding), context of study (e.g. industry, locus), methods employed (e.g. historical case study, inductive), sources and techniques of data collection (e.g. time and sequence of data collection), analysis guidance (methods and techniques), generated insights (e.g. key findings, conceptual models), discussion, and overall assessment (e.g. reliability, inconsistent information).

The coding form used in this paper was employed by previous studies of qualitative meta-synthesis of the case studies (Vaz & Espejo, 2017; Morais-da-Silva, Takahashi, & Segato 2016; Magnin & Takahashi, 2017). After applying the coding form in the articles, there were 7 papers remaining. Table 6 presents the studies and the definition of risk and of the organizational ambidexterity used by each author.

4.4. Analysis of the Case-Specific Level

According to Hoon (2013, p.538), in the analysis at the specific level of the case the researcher must "explore each case study in terms of the variables, which logically influence others, which variables are likely to appear together and which are not". This mapping process of the possible influence helps in the construction of a theoretical model with the causal connections and is in agreement with Miles, Huberman and Saldaña (2014) and Eisenhardt and Graebner (2007). Using the analysis at the specific level of the case, we suggest several propositions for future investigations.

The first proposition positions risk as an antecedent of exploration (Baškarada, Watson, & Cromarty, 2017; Yang & Gabrielsson, 2017; Gurd & Helliar, 2017). The justification for this proposition lies in the fact that when the risk is low the company may have few market uncertainties and decide to invest resources to exploit the new innovations (Junni et al., 2013).

Table 4
Case studies found in the organizational ambidexterity and risk theme

Journal / Conference	H-index	Total captured	Paper Included
Academy of Management Journal	252	1	
Academy of Management Perspectives	100	1	
Academy of Management Proceedings	–	1	
Academy of Management Review	216	1	
Asian Business and Management	13	1	
British Accounting Review	47	1	X
Chinese Management Studies	14	2	
Construction Management and Economics	68	1	
Cross Cultural and Strategic Management	–	2	
Espacios	–	1	
European Journal of Marketing	66	1	
Human Resource Management	69	1	
IAMOT 2016 - 25th International Association for Management of Technology Conference	–	1	
Industrial Marketing Management	100	1	X
Information Technology and Management	27	1	
International Journal of Human Resource Management	82	2	X
International Journal of Innovation Management	27	1	
International Journal of Managing Projects in Business	21	2	X
International Journal of Organizational Analysis	14	1	X
International Journal of Project Management	103	1	
International Journal of Technology Management	45	1	
International Marketing Review	64	1	
Journal of Business and Technical Communication	29	1	
Journal of Change Management	15	1	
Journal of Operations Management	149	2	
Journal of Product Innovation Management	112	2	
Journal of Small Business Management	79	1	
Journal of Supply Chain Management	47	1	
Journal of Technology Management and Innovation	16	1	
Journal of the Academy of Marketing Science	131	1	
Korean Academy Of International Business Management	–	1	
Leadership and Organization Development Journal	35	1	
Management	–	1	
Management Decision	57	1	
Multinational Business Review	11	1	
Optimal Management Strategies in Small and Medium Enterprises	–	1	
Organizational Dynamics	49	1	
Revista de Administração de Empresas (RAE)	7	1	
Research in Global Strategic Management	8	1	

Table 4
Cont.

Journal / Conference	H-index	Total captured	Paper Included
Strategic Management Journal	219	1	
Supply Chain Management	84	1	
Technology Analysis and Strategic Management	53	1	X
Tertiary Education and Management	24	1	
Total Quality Management and Business Excellence	61	1	X
ZWF *Zeitschrift fuer Wirtschaftlichen Fabrikbetrieb*	10	1	

Table 5
Exclusion and Inclusion Criteria

Criteria	Comments	Reasons for exclusion
Qualitative case studies	This criterion was used to restrict the meta-synthesis to articles with the methodology and / or approach of qualitative case studies. Articles have been excluded that use, for example, illustrative cases to demonstrate, in depth, how risk and ambidexterity relations can occur. In addition, case studies using quantitative data were also excluded.	Illustrative case studies: (Schmitt et al., 2010; Makarevich, 2017).
Focus on organizational ambition and risk or uncertainty.	This criterion allows to include studies of organizational ambidexterity whose a priori research questions or objectives are directly or indirectly related to risk or uncertainty.	Chagas, Leite & de Jesus, 2017; Brink, 2017; Vorbach, Mueller, Egger, 2016; Lowik, Van Rossum, Kraaijenbrink & Groen, 2012; Liu, Wang & Sheng, 2012; Geraldi, Kutsch e &Turner, 2011; Cao & Zhang, 2011;
Quality of the study	Analysis of studies with respect to quality, as suggested by Eisenhardt (1989). The items analyzed were in terms of rigor, report style, clear link between theory and empirical evidence, clear case contextualization, multiple data sources, clarity as to the theoretical purpose.	Case studies lacking quality criteria (Steiber & Alänge, 2013)
Studies that were not available for download	Papers that were not possible to evaluate and categorize the full version.	(Reilly & Scott, 2016; Londono, Velez & Rojas, 2015)

With the low risk, the organization can be more certain of the strategic decisions taken and seek exponential market gains through new products and experimentation (Benner & Tushman, 2003). Evidence suggests that when risk is low, there is greater boldness in the organization's decisions to seek differentiated outcomes and ahead of its time (Gupta, Smith, & Shalley, 2006), and these decisions can be favored in a low-risk setting. Therefore, we suggest:

P_1: When risk is low, the organization tends to use strategic resources for exploration.

On the other hand, when the risk is high, the company can decide to invest resources in exploitation, since it already has a knowledge of the activities and processes, low operating costs and greater efficiency in the tasks (Gibson & Birkinshaw, 2004). With this domain of knowledge in mind, even though there is a high level of uncertainty, decisions and capabilities via exploitation

Table 6
Papers included in the meta-synthesis

Study	Method	Risk Definition	Ambidexterity Definition	Segment	Analyze
Kodama & Shibata (2014)	Case Study	Risk is the level of uncertainty and difficulty of the business.	Ambidexterity is uncertainty of management (exploration) and management of existing product (exploitation)	Engine company in Japan	A case with the use of in-depth interviews.
Yang & Gabrielsson (2017)	Multiple cases	Risk of the market, technological and internal to the company.	Ambidexterity is the pursuit of exploration and exploitation.	High-tech energy companies in Finland	Four Case Studies with two levels of analysis (entrepreneur level and firm level)
Malik, Pereira & Tarba (2017)	Case Study	Propensity risk-taking.	Ambidexterity is the ability of individuals to manage routines of exploration and exploitation	Technology company in India	Single case study with individual, functional and organizational analysis levels.
Gurd & Helliar (2017)	Multiple cases	Management Organizational, financial and strategic risk.	Ambidexterity is the core business in radical innovation (exploration) or incremental innovation (exploitation).	Technology company in Australia	Two cases studies, in the same industry, that provide different insights into leadership and the balance of innovation, risk management and control.
Baskarada, Watson & Cromarty (2017)	Case Study	Risk and risk appetite	Ambidexterity is represented by the transactional versus transformational leadership style	Armed Forces of Australia	Interviews with managers and use of comparative method
Turner, Kutsch & Leybourne (2015)	Multiple cases	Risk is the variability between certainty and complexity / uncertainty.	Ambidexterity has two dimensions. Exploitation is similar to a more rule-based approach and exploration has strong parallels with mindfulness (reliability based on human cognition).	Five technology companies in England	Interviews with decision makers (directors, middle and senior managers, and technical managers).
Tahar, Niemeyer & Boutellier (2011)	Case Study	Risk is operational and strategic risk management.	Ambidexterity is understood by two elements, efficiency / without adaptability and creativity / adaptability	A federal education organization in Switzerland	Organizational level and project level, with 12 projects in 1 case.

are frequent, well-known (e.g. prior know-how), and controllable by the organization (e.g. there are monitoring mechanisms see McCarthy & Gordon , 2011), reducing possible insecurities in the strategic choices. In this sense, when there is a high level of risk, in the case of exploitation, there is less boldness in the organization's strategic decisions to seek differentiated or new results, remaining in traditional processes, known activities and controllable actions (Gupta, Smith, & Shalley, 2006). Thus, we have:

P_2: When there is a high degree of risk, the organization tends to use strategic resources for exploitation.

In the theoretical model, we suggest that risk be a moderator (Opper, Nee, & Holm, 2017) in the relationship between ambidextrous capacities and the decision-making process. Based on Kodama and Shibata (2014), we propose that with low (vs. high) risk, exploration has a greater (vs. smaller) effect on strategic decision-making because the organization invests in experimentation (e.g. product, new market, productive process, etc.), and this experimentation is associated with the discovery of innovation. The rationale for the amplified effect of risk is that exploring and prospecting for new ideas, processes, markets, and products tends to positively influence strategic decision making, and this effect tends to be even stronger with a low degree of market uncertainty. Therefore, the relationship between exploration and strategic decision making is sharper (vs. weak), with lower (vs. higher) levels of risk. Thus:

P_3: The effect of exploration on decision making or performance is maximized when there is low level of risk.

In the next assumption, we suggest the moderating effect of risk when the organizational orientation is of the exploitation type. With high levels of risk, it is assumed that the exploitation tends to have reduced or mitigated effect in the decision making. The negative moderation of risk, in this case, is because given the high level of risk, the organization tends to decide to refine existing processes and products, produce the products it already produces more efficiently (e.g. lower cost), and implement monitoring and enforcement controls (Kodama & Shibata, 2014). Therefore, given the high level of risk, the organization tends to follow an exploitation orientation that is safer to calculate the pros and cons of decision making. Thus, the relationship between exploitation and decision-making is reduced with higher (vs. lower) levels of risk. Therefore:

P_4: The effect of exploitation on decision making or performance is minimized when there is a high level of risk (vs. low level of risk).

The fifth proposition is a direct relationship between risk and rational decision making. The risk has the element of uncertainty associated with it and given the degree of doubt, the manager tends to make a strategic decision in a different way (Turner, Kutsch, & Leybourne, 2016) or even make a choice in order to minimize the possible negative results. The decision-making process, in order to reduce negative outcomes, is risk aversion (Kahneman & Tversky, 1979; Seo, Goldfarb & Barrett, 2010). High levels of market uncertainty, technological and internal (Yang & Gabrielsson, 2017) may cause the manager to make a rational decision by weighing numbers and analyzing statistics, avoiding high-risk strategies (Kahneman & Lovallo, 1993) (Opper, Nee, & Holm, 2017) and with great insecurity (Milliken, 1987). Rational decision should ensure positive organizational results amid high levels of risk and insecurity (Elbanna & Child, 2007). The rational decision-making model is based on the cognitive (Hodgkinson & Healey, 2011) sensing, seizing, and transforming capacities by Teece (2007). In addition, in uncertain

environments, the rational decision model tends to use heuristics as an element to reduce error (Maitland & Sammartino, 2015). Therefore:

P_5: When there is a high level of risk, decision making tends to be rational.

On the other hand, lower levels of uncertainty may cause the manager to make a decision intuitively (Malik, Pereira, & Tarba, 2017). As there is less risk, less negative consequence of action, and lower level of complexity (Shrivastava & Grant, 1985), managers can make decisions based on perception and with little logic (Tahar, Niemeyer & Boutellier, 2011). Intuition takes as its basis previous knowledge, perception of what may occur in the future, and not very concrete (Burke, & Miller, 1999) instead tending to be more abstract. Nevertheless, the decision by intuition may be faster to implement than the rational decision (Matzler, Bailom, & Mooradian, 2007) and be explained by the low level of risk that the company faces. Based on this context, we suggest that risk tends to influence the strategic decision-making process from rational to intuitive (Simon, 1987). Therefore:

P_6: When there is a low level of risk, decision making tends to be intuitive.

4.5. Synthesis at the transverse level and proposition of a theoretical framework

The meta-synthesis provided data to draw a conceptual model and suggest six propositions that advance in the state of the art of the relationship between risk constructs, organizational ambidexterity and decision making. Through the meta-synthesis of case studies, we were able to suggest a model in which risk plays an antecedent role in the exploration and exploitation dimensions, a moderating role of its effects on firm performance results (e.g. outcomes), and a role predictor of organizational revenue. The multiple effects of risk on the company's ambidextrous capacity suggests a cyclical role for the company. Cyclic or reciprocal effect is uncommon in administration studies (see Glomb & Liao, 2003), but are possible. Cyclical effect presupposes that risk can explain ambidextrous behavior, influencing their strategic decisions while staying congruent with the environment that they find themselves. Organizations can then manage and reduce the risk accordingly.

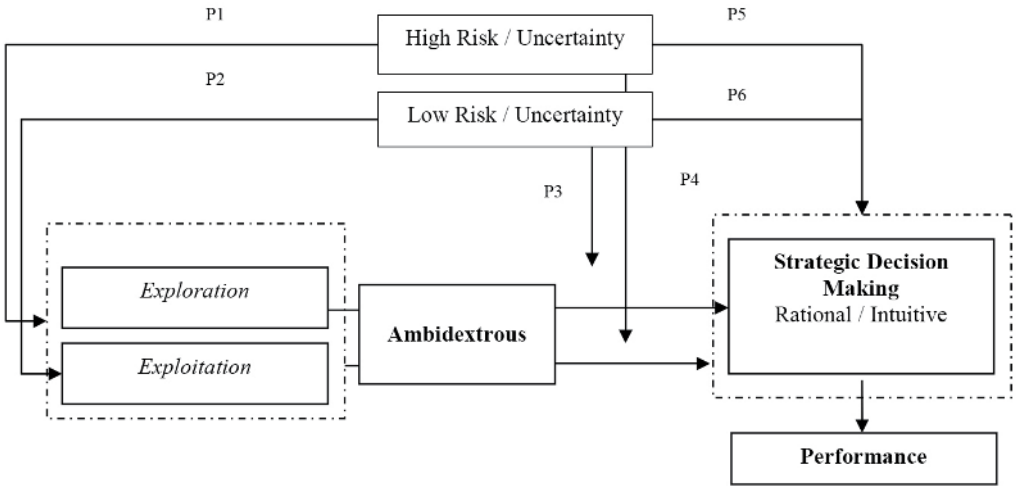

Figure 1 Theoretical Framework Risk and Ambidexterity.

The propositions suggested here have the interpretive elements of qualitative research and are aware of empirical tests using structural equation modeling, multilevel hierarchical models, or even multiple regression models. In addition, the proposition of risk moderation suggests two interesting paths for future discussions in the field of ambidexterity. First, that risk tends to support ambidexterity, minimizing the negative effects, or harming other capacities of ambidexterity, obstructing the positive effects. In summary, Figure 1 presents the Theory Framework Ambidexterity Risk and Decision Making.

5. FINAL CONSIDERATIONS

5.1. Theoretical Contributions

We suggest three theoretical contributions: First, in understanding the theoretical elements of the ambidextrous capabilities of exploration and exploitation, the Meta-Synthesis of Qualitative Studies provided the information needed to suggest that risk tends to influence how organizations invest their dualities. These mechanics occurs by the probability of maximizing or minimizing the success or failure of a decision, being based on the theory of risk aversion (Kahneman & Tversky, 1979; Kahneman & Lovallo, 1993). Organizations should maximize the ability to exploit new market opportunities and product development in situations where the risk is low. On the other hand, if there is a high risk and one is averse to it, the company must change the way it acts and focus its efforts on the exploitation capacity, keeping a focus on manufacturing processes and strategies already known.

Second, the effects of exploration and exploitation capacities on the formation of ambidexterity, decision-making, or even organizational performance are known in the literature (Junni et al., 2013). However, little is known about the moderating effect of risk in organizational studies. Our study advances in this aspect, while extending previous research on the moderating effect of risk on consumers (Campbell & Goodstein, 2001) and project development (Zwikael et al., 2014), bringing to the business level. With this expansion, the theoretical framework positions two aspects of risk, one of them with a positive and amplifying role and another with a negative role that reduces the effects of exploration and exploitation in the results of the organization.

Third, based on the theory of decision making (Burke & Miller, 1999; Matzler, Bailom, & Mooradian, 2007) in management, we were able to suggest different effects of risk levels. When risk is high and suggests a high degree of uncertainty about action, the possibility of behavior is through rational decision, which ponders cognitive and logical elements for choice (Sjöberg, 2006). On the other hand, when the risk is low and suggests a lower degree of uncertainty about the action, the suggestion of action is through the intuitive decision, which ponders elements of previous and heuristic experience (Simon, 1987). This proposition of research into the differentiated effects of risk can advance, in the classic proposal by Coombs and Pruitt (1960), various variations and probabilities.

5.2. Practical Contributions

By rescuing the concept of risk as a dynamic, contingent, and multidimensional factor in the strategic decision, this study suggests to managers of companies a greater degree of attention to the decision making process. This attention brings to light the analysis of the degree of risk linked to a decision and the perception of the manager. With this, one can manage the organizational exposure to risk.

Managers of companies of various sizes can apply the conceptual model proposed here. Both small and large companies, by engaging resources in a strategic decision, can change their position (exploration or exploitation) by analyzing the risks associated with each. Moreover, based on market turbulence, technological uncertainties (Yang & Gabrielsson, 2017) and high uncertainty, the organization can use the theoretical model to consider whether its strategic decision-making takes into account more the intuitive or rational aspects of the board of directors.

Risk management, as well as its forms of mitigation and perception, can be used as explanatory factors of ambidextrous positioning, both for the market, as for shareholders or stakeholders and for their subsequent analysis of performance. In practice, the firm ponders whether the risk of a business or a unit is high or low and with the application of the model, may have more elements for a decision between exploitation and exploration resources.

5.3. Future Research and Limitations

This study is not free of limitations, given the methodological and theoretical choices of the researchers, which can be solved in future works. First, the study was limited to a sample of 7 case studies. Future research can advance systematic reviews and use research that has addressed different methodological techniques. Second, the study limited the exploration and exploitation capabilities of organizational ambidexterity (March, 1991). Future research can advance the choice of ambidexterity and cut other dimensions such as efficiency and effectiveness, alignment and adaptability (Napier, Mathiassen, & Robey, 2011), agility and discipline (Boehm & Turner, 2004) and efficiency and flexibility (Adler, Goldoftas & Levine, 1999). Third, we chose to study risk from the perspective of uncertainty (Aven & Renn, 2009). Research may suggest that risk and uncertainty are separate dimensions, one being the antecedent of the other (Aven & Renn, 2009) and therefore, the theoretical framework could have another construct, recommending new propositions. Fourth, this study develops a theoretical model based on the sample of selected case studies. Future research, using another sample, can expand this framework for example when there is a new product development. Also, ambidexterity has curvilinear effects due to interaction with environmental factors (Yang & Li, 2011). Curvilinear effects of ambidextrous behavior may be related to different risk levels, which deserves to be investigated in future studies. Finally, the result of the meta-synthesis proposed here is limited to the construction of a theoretical model with research propositions. Future research may advance this study with empirical tests of hypotheses.

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APPENDIX A

Total papers extracted from literature research

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
1	Malik, Pereira, Tarba, 2017	International Journal of Human Resource Management, pp. 1-29					X	Included
2	Vemić, 2017	Optimal Management Strategies in Small and Medium Enterprises,		X				-
3	Gurd, Helliar, 2017	British Accounting Review, 49(1), pp. 91-102					X	Included
4	Baškarada, Watson, Cromarty, 2017	International Journal of Organizational Analysis, 25(3), pp. 506-515					X	Included
5	Huang, Cantwell, 2017	Multinational Business Review, 25(1), pp. 28-51				X		-
6	Yang, Gabrielsson, 2017	Industrial Marketing Management 64, pp. 147-160					X	Included
7	Chagas, Leite and de Jesus, 2017	RAE *Revista de Administracao de Empresas*, 57(3), pp. 245-257					X	Excluded (has no focus on both ambidexterity and risk)

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
8	Brink, 2017	International Journal of Managing Projects in Business 10(2), pp. 315-329					X	Excluded (has no focus on both ambidexterity and risk)
9	Madanoglu, Alon and Shoham, 2017	International Marketing Review 34(1), pp. 29-45				X		-
10	Junmin, Yang, 2017	Korean Academy Of International Business Management				X		-
11	Yi Liu, 2017	Academy of Management Proceedings				X		-
12	Makarevich, 2017	Organizational Dynamics, 46(3), pp. 148-156.					X	Excluded (illustrative cases)
13	Luo, Zheng, Ji, Liang, 2016	International Journal of Human Resource Management, pp. 1-22		X				-
14	Zhou, Lu, Chang, 2016	Cross Cultural and Strategic Management, 23(4), pp. 569-589				X		-
15	Josephson, Johnson, Mariadoss, 2016	Journal of the Academy of Marketing Science 44 (4), pp. 539-554				X		-

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
16	Turner, Kutsch, Leybourne, 2016	International Journal of Managing Projects in Business 9(4), pp. 845-864					X	Included
17	Trapp, Warschat, 2016	ZWF Zeitschrift fuer Wirtschaftlichen Fabrikbetrieb, 111(12), pp. 824-829		X				-
18	Lee, Rha, 2016	Management Decision, 54(1), pp. 2-23				X		-
19	Reilly, Scott, 2016	Research in Global Strategic Management, 17, pp. 141-164					X	Deleted (no access)
20	Luo, Zheng, 2016	Cross Cultural and Strategic Management 23(2), pp. 386-392		X				-
21	Vorbach, Mueller, Egger, 2016	IAMOT 2016 - 25th International Association for Management of Technology Conference, Proceedings: Technology - Future Thinking					X	Excluded (has no focus on both ambidexterity and risk)
22	Londoño, Vélez, Rojas, 2015	Espacios, 36(7), pp. 16					X	Deleted (no access)

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
23	Li, Lin, Tien, 2015	Leadership and Organization Development Journal, 36(8), pp. 927-954				X		-
24	Mom, Fourné, Jansen, 2015	Human Resource Management 54, pp. 133-153				X		-
25	Alexander, Knippenberg, 2014	Academy of Management Review, 39(4), pp. 423-438		X				-
26	Kodama, Shibata, 2014	Technology Analysis and Strategic Management 26(3), pp. 279-306					X	Included
27	Huang, Yen, Liu, 2014	Supply Chain Management 19(1), pp. 64-78				X		-
28	Rodriguez, Hechanova, 2014	Journal of Technology Management and Innovation 9(3), pp. 21-33				X		-
29	Yu, Chen, Nguyen and Zhang, 2014	Information Technology and Management 15(2), pp. 81-98				X		-
30	Birkinshaw and Gupta, 2013	Academy of Management Perspectives, 27(4), pp. 287-298		X				-

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
31	Steiber and Alänge, 2013	Total Quality Management and Business Excellence, 24 (1-2), pp. 48-61					X	Excluded (does not meet quality criteria)
32	Blome, Schoenherr and Kaesser, 2013	Journal of Supply Chain Management 49(4), pp. 59-80				X		-
33	Vanhaverbeke, Gilsing and Duysters, 2012	Journal of Product Innovation Management, 29(5), pp. 784-802				X		-
34	Lowik, Van Rossum, Kraaijenbrink and Groen, 2012	Journal of Small Business Management, 50(2), pp. 239-256					X	Excluded (has no focus on both ambidexterity and risk)
35	Chandrasekaran, Linderman and Schroeder, 2012	Journal of Operations Management, 30(1-2), pp. 134-151				X		-
36	Xi, Zhang and Ge, 2012	Chinese Management Studies 6(3), pp. 395-412		X				-
37	Liu, Wang and Sheng, 2012	Construction Management and Economics 30(5), pp. 399-409					X	Deleted (out of scope)
38	Patel, Terjesen and Li, 2012	Journal of Operations Management 30(3), pp. 201-220				X		-

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
39	Tahar, Niemeyer and Boutellier, 2011	Tertiary Education and Management, 17 (4), pp. 289-308					X	Included
40	Liu, Luo and Huang, 2011	Asian Business and Management, 10(4), pp. 529-553				X		-
41	Geraldi, Kutsch and Turner, 2011	International Journal of Project Management 29(5), pp. 557-567					X	Excluded (has no focus on both ambidexterity and risk)
42	Cao, Zhang, 2011	Chinese Management Studies 5(2), pp. 146-163					X	Excluded (has no focus on both ambidexterity and risk)
43	Kollmann and Stöckmann, 2010	International Journal of Technology Management, 52(1-2), pp. 153-174				X		-
44	Hoang, Rothaermel, 2010	Strategic Management Journal, 31(7), pp. 734-758				X		-
45	Schmitt, Probst and Tushman, 2010	Management, 13(3), pp. 128-150					X	Excluded (illustrative cases)
46	Haas, 2010	Academy of Management Journal, 53(5), pp. 989-1008				X		-

Papers identified in the search strategy of basic literature			Papers evaluated and categorized according to their Titles / Abstracts / Key Words				Papers evaluated and categorized according to their full text version	
No.	Author / Year	Journal	False / Positive	Conceptual Paper	Quantitative Research	Quantitative Research	Qualitative Research (Case Study)	Case Studies Included / Excluded from Meta-Synthesis
47	Brion, Mothe and Sabatier, 2010	International Journal of Innovation Management, 14(2), pp. 151-178				X		-
48	Sethi and Sethi, 2009	Journal of Product Innovation Management, 26(2), pp. 206-221				X		-
49	Judge and Blocker, 2008	European Journal of Marketing 42(9-10), pp. 915-926		X				-
50	Brumberger, 2007	Journal of Business and Technical Communication, 21(4), pp. 376-401		X				-
51	Voelpel, Leibold and Tekie, 2006	Journal of Change Management, Vol 6(3), Sep, 2006. pp. 257-276.				X		-