How to achieve contextual ambidexterity
Abstract

This paper describes the results of the study of the effects of performance management, social context and knowledge inflows on ambidexterity. Several theories support that ambidexterity has a positive influence on performance. Performance management is a combination of stretch and discipline but too much emphasis on the performance management will create burnout and disillusion among employees. Social context is a combination of trust and support, too much emphasis on the social context creates an atmosphere in which no work gets done. A good balance between social context and performance management will have a positive influence on ambidexterity. The knowledge flow process of exploitation and exploration is fundamentally different because they tap different administrative routines and managerial behavior. Exploitation involves learning from a top-down process in which the top management moves to institutionalize the routines and behaviors that are most suited for refining current competencies. In contrast, exploration generally involves bottom-up learning in which the top management team is persuaded to change old routines and commitment to new action. Top-down, bottom-up and horizontal knowledge flows will have a positive influence on ambidexterity. According to Levinthal and March (1993) an organization that only focuses on exploitation will eventually suffer from obsolescence and an organization that solely focuses on exploration will never have the gains from the knowledge they obtained. Finding the appropriate balance between exploitation and exploration is hard to specify.

Four hypotheses are formulated to answer the problem statement. The first hypothesis states that the interaction term of performance management and social context will have a positive influence on ambidexterity. The second hypothesis deals with the relationship between top-down knowledge inflows and exploitation. The third hypothesis deals with the relationship between bottom-up, horizontal knowledge inflows and exploration. The fourth hypothesis handles the relationship of performance management, social context, knowledge inflows on ambidexterity.

The data is gathered at Rabobank Tilburg en omstreken which is a business unit of the Rabobank Group. Regression analyses are preformed to test the different hypotheses. Results of this study indicate that there is a significant influence of top-down knowledge flows on exploitation and a significant relationship between horizontal knowledge flows and exploration. This research could not find a relationship between performance management, social context and ambidexterity.
Preface

In this report you will find the results of a study about the balance between exploitation and exploration. The goal of the research is to provide Rabobank Tilburg en omstreken tools by which they can stimulate the balance between exploitation and exploration.

This study is conducted in line with the faculty of Business and Economics at Tilburg University in Tilburg, The Netherlands. The title of this study is: “How to achieve contextual ambidexterity”.

I would like to thank Dr Adam Tatarynowicz for supervising me while writing this thesis.

Tilburg, February 18, 2011
# Table of Contents

1. Introduction .................................................................................................................. 7
   1.1 Introduction ............................................................................................................. 7
   1.2 Problem Indication ................................................................................................. 7
   1.3 Problem statement .................................................................................................. 9
       1.3.1 Definitions ....................................................................................................... 9
   1.4 Research Question ................................................................................................. 10
   1.5 Structure ................................................................................................................ 10

2. Theory .......................................................................................................................... 12
   2.1 Evolution of ambidexterity .................................................................................... 12
       2.1.1 Research model of ambidexterity ................................................................. 13
       2.1.2 Ambidexterity and performance ................................................................. 14
       2.1.3 Central tensions of organizational ambidexterity ....................................... 14
   2.2 Balance between exploitation and exploration ..................................................... 16
   2.3 Contextual ambidexterity ....................................................................................... 17
       2.3.1 Discipline ....................................................................................................... 17
       2.3.2 Stretch ............................................................................................................ 18
       2.3.3 Trust ............................................................................................................... 18
       2.3.4 Support .......................................................................................................... 18
       2.3.5 Organization context ..................................................................................... 19
       2.3.6 Managers ambidexterity ............................................................................... 19
   2.4 Empirical evidence ................................................................................................. 19
   2.5 Summary ................................................................................................................ 20

3. Theory .......................................................................................................................... 21
   3.1 Management and ambidexterity .......................................................................... 21
       3.1.1 Characteristics of ambidextrous managers ............................................... 21
3.1.2 Knowledge and ambidexterity ................................................................. 22
3.2 Hypotheses ................................................................................................. 24
3.3 Theoretical framework .............................................................................. 26
3.4 Summary ....................................................................................................... 27

4. Research Method ............................................................................................ 28
4.1 Research setting .......................................................................................... 28
4.2 Analysis model ........................................................................................... 28
4.3 Dependent variable ..................................................................................... 28
4.3.1 Ambidexterity indicator ........................................................................ 29
4.4 Independent variables ............................................................................... 30
4.4.1 Performance management context ....................................................... 30
4.4.2 Social context ......................................................................................... 30
4.4.3 Knowledge inflows ................................................................................ 31
4.5 Control variables ....................................................................................... 31
4.6 Sample .......................................................................................................... 31
4.7 Summary ....................................................................................................... 32

5. Results ........................................................................................................... 33
5.1 Descriptive statistics .................................................................................. 33
5.2 Tests of hypotheses ..................................................................................... 35
5.2.1 Hypothesis 1 .......................................................................................... 35
5.2.2 Hypothesis 2 .......................................................................................... 36
5.2.3 Hypothesis 3 .......................................................................................... 36
5.2.4 Hypothesis 4 .......................................................................................... 37
5.3 Summary ....................................................................................................... 37

6 Discussion and Conclusions .......................................................................... 39
6.1 Conclusion .................................................................................................... 39
6.2 Discussion ..................................................................................................... 40
6.3 Limitations .................................................................................................... 40
6.4 Recommendations .............................................................................................................. 41
References ....................................................................................................................................... 42
Appendix I ...................................................................................................................................... 47
Appendix II ...................................................................................................................................... 53
Appendix III .................................................................................................................................... 55
Appendix IV ..................................................................................................................................... 56
Appendix V ...................................................................................................................................... 57
Appendix VI ..................................................................................................................................... 58
Appendix VII ................................................................................................................................... 59
1. Introduction

1.1 Introduction

This paper is a master thesis to finish the master program Strategic Management at Tilburg University. The aim of writing this thesis is to define a problem that is relevant to academics and/or practitioners, to develop a research design that helps to find answers to the problem indentified and critically reflect the findings. This paper is written during my internship at Rabobank Tilburg en omstreken.

In order to have better understanding of the position of Rabobank Tilburg en omstreken (RTeo) the next paragraphs give an overview of the company.

Rabobank Group is an international provider of financial services operating on the basis of cooperative principles. It offers retail banking, wholesale banking, asset management, leasing and real estate services. Focus is on all-finance services in the Netherlands and on food and agribusiness internationally. Rabobank Group is comprised of independent local Rabobanks plus Rabobank Nederland, their umbrella organization, and a number of specialist subsidiaries. The 147 local Rabobanks in the Netherlands are Rabobank Group’s cooperative core businesses. Rooted in the bank’s cooperative structure, clients can become members of their local Rabobank. The local Rabobanks, for their part, are members and shareholders of Rabobank Nederland, the umbrella cooperative. Rabobank Group’s total employee base numbers about 59,000 FTEs, who serve about 9.5 million clients in 48 countries. Rabobank Tilburg en omstreken (RTeo) is one of the 147 local Rabobanks and shareholder of Rabobank Nederland (Rabobank, 2010). At RTeo 300 FTE serve about 100,000 customers. This thesis will only focus on RTeo; RTeo is considered as a business unit of the Rabobank Group.

This chapter gives an introduction to the subject of this paper. In section 1.2 the problem indication is given, followed by the problem statement in 1.3 and the research questions in 1.4. Section 1.5 gives an overview of the research methods used in this paper. The overall structure of this thesis is given in section 1.6.

1.2 Problem Indication

Firms in a dynamic environment are challenged to both explore new possibilities in order to cope with future changes in the business environment and to exploit old certainties to meet today’s demand (March, 1991). An ambidextrous organization is an organization that maintains a high
degree of balance between exploitation and exploration (Simsek, 2009). Ambidexterity could focus on the organizational structure or on the behavior of employees to demonstrate exploration and exploitation simultaneously (Gibson, & Birkinshaw, 2004). Researchers have used ambidexterity to analyze numerous significant organizational phenomena. Its importance has been noted across the fields of strategic management, organization theory, innovation and technology management, organizational behavior and organizational learning and adaption (Simsek, 2009). Previous research suggests that firms face difficulties to both explore and exploit and maintain a balance (Mom, van den Bosch, & Volberda, 2007). Gupta, Smith and Shalley (2006) noted that “although near consensus exists on the need for balance of exploitation and exploration, there is considerably less clarity on how this balance can be created” (p. 697). According to Simsek (2009) research to date has typically employed one variable to explain ambidexterity, such as dual structures, behavioral context or top management team behavioral integration. This thesis will try to combine the variables of behavioral context and top management team behavioral integration to explain ambidexterity. Because the research takes place at a business unit of Rabobank, the variable of dual structures will be out of scope.

According to previous studies (He, & Wong, 2004; Gibson, & Birkinshaw, 2004) ambidexterity influences performance in a positive way. Due to limited resources this thesis will focus on how to achieve ambidexterity. The assumption is that ambidexterity will enhance performance in the long turn.

At this moment Rabobank Tilburg en omstreken (RTeo) undergoes a transformation process due to a change in customer demand. Distribution of services and products is shifting from face-to-face to internet and telephony. According to the management of RTeo, employees are the most important resource in this transformation process. Change in demand and ways to serve the clients forces RTeo to make decisions regarding distribution of products. The input from employees is important for exploration of new effective ways to serve clients. However, employees still have to serve clients in the current situation and this should be done as efficient as possible. The aim of this research is to investigate how management could support employees to simultaneously demonstrate efficiency and creativity, with a focus on the behavior of employees to search for more contextual ambidexterity in RTeo. Currently, the input from employees for exploration and exploitation is not enough according to management. RTeo organizes sessions with employees to come up with fresh ideas for exploitation and exploration but the results are not satisfying.
1.3 Problem statement

This is a study regarding the variables that influence the employees to be more ambidextrous, with a focus on the role of employees regarding to ambidexterity. This study provides management input how they can support employees with finding the balance between exploitation and exploration. Management shares the vision that ambidexterity will lead to higher performance in the long term.

Deriving from the previous paragraph this leads to the following problem statement:

**How can the management of Rabobank Tilburg en omstreken support employees in finding a balance between exploitation and exploration.**

1.3.1 Definitions

To have a good understanding of the different definitions used, most important definitions or explanations are given below.

**Exploitation:** Exploitation is associated with activities like “refinement, choice, production, efficiency, selection, implementation, execution” (March, 1991, p. 71).

**Exploration:** Exploration is associated with activities like “search, variation, risk taking, experimentation, play, flexibility, discovery, innovation” (March, 1991, p. 71).

**Ambidexterity:** Ambidexterity is defined as “an organizations ability to be aligned and efficient in its management of today’s business demands while simultaneously being adaptive to changes in the environment” (Raisch, Birkinshaw, 2008, p. 375).

**Structural ambidexterity:** Gibson and Birkinshaw (2004) found that structural ambidexterity is achieved by “developing structural mechanisms to cope with the competing demands faced by the organization for alignment and adaptability” (p.211).

**Contextual Ambidexterity:** Gibson and Birkinshaw (2004) define contextual ambidexterity as “the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit” (p.209).
1.4 Research Question

This study tries to find an answer to the problem statement by answering the following research question:

*Which variables will influence the balance between exploitation and exploration for employees?*

The purpose of this question is to find a theoretical base for exploitation and exploration in relation to contextual ambidexterity.

1.5 Structure

The goal of this paper is to find variables of interest regarding the balance between exploitation and exploration for employees and the influence of this on contextual ambidexterity. This research focuses on RTeo. This descriptive study will help management of RTeo to take well founded actions to improve contextual ambidexterity.

Chapter 2 starts with a literature review regarding ambidexterity and with a focus on contextual ambidexterity. From this literature review variables of interest should be identified.

Chapter 3 starts with a literature review on knowledge inflows. Then the hypotheses are formulated based on the findings of the literature review in chapter 2 and chapter 3. Based on the hypotheses, the theoretical framework is designed.

Chapter 4 describes the research methods used to address the problem statement. The theoretical framework is used as starting point for gathering primary data. The data collection method is a mail questionnaire; the advantage is that the respondents can complete them at their convenience. A 30 percent response rate is considered as acceptable (Sekaran, Bougie, 2010). The employees and managers of RTeo are the population that is investigated. The sample frame is delivered by the HR department and contains all the employees and managers who work directly for RTeo. The sample design is a disproportionate stratified random sample with stratum of management and employees. The different strata contain different numbers of elements, the stratum of management is expected to be too small and the stratum of employees is expected too large. In order to have a more representative study, the elements of each stratum are redistributed in a more meaningful way. The researcher is aiming to randomly select respondents from the strata to improve generalisability.
Chapter 5 provides an analysis of results from the primary data. Different statistical techniques are used for analyzing the data. After testing the primary data the research question could be answered. The variables that influence ambidexterity will be checked for significance.

Chapter 6 gives general conclusions based on the previous chapters. Recommendations for improving contextual ambidexterity will be given.
2. Theory

A persistent new theme in a variety of organizational literature is that successful firms are ambidextrous. The number of studies in leading management journals that explicitly refer to the ambidexterity concept increased from less than 10 in 2004 to more than 80 in 2009 (Raisch, Birkinshaw, Probst & Tushman, 2009). Researchers have adopted the human trait of ambidexterity (an individual’s ability to use both hands with equal skill) as a metaphor to describe competent organizations (Carmeli & Halevi, 2009). Ambidexterity means that the firms are aligned and efficient in their management of today’s business demands while simultaneously adaptive to changes in the environment (Duncan, 1976; Gibson & Birkinshaw, 2004; Tushman & O’Reilly, 1996).

2.1 Evolution of ambidexterity

Intensified competition and changing environments confront organizations with a tension between exploiting existing competencies and exploring new ones (Levinthal & March, 1993). Duncan (1976) was the first researcher to use the term ambidexterity, however March’s (1991) article is frequently cited as the catalyst for the current interest in the concept of ambidexterity (Raisch & Birkinshaw, 2008). March (1991) described the relation between the exploration of new possibilities and the exploitation of old certainties in organizational learning. Exploration is associated with terms like “search, variation, risk taking, experimentation, play, flexibility, discovery, innovation” (March, 1991, p.71) while exploitation is associated with terms like “refinement, choice, production, efficiency, selection, implementation, execution” (March, 1991, p. 71). Exploitation and exploration may therefore require fundamentally different organizational structures, contexts and strategies (Raisch & Birkinshaw, 2008). Several researchers maintain that there is a trade-off between aligning the organization to exploit existing competencies and explore new ones (Floyd & Lane, 2000; Levinthal & March, 1993). Gibson and Birkinshaw (2004) found that researchers viewed ambidexterity in structural terms. They defined structural ambidexterity as “developing structural mechanisms to cope with the competing demands faced by the organization for alignment and adaptability” (p.211). According to Gibson and Birkinshaw (2004) there is a growing recognition that systems and processes in a given context can achieve the balance between exploitation and exploration. These systems and processes are important because they provide an alternative way of finding the balance than architectures or structures in structural ambidexterity are intended to find. Based on this insight Gibson and Birkinshaw (2004) defined contextual ambidexterity as “the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit” (p. 209). Thus, structural ambidexterity posits dual structures as the means to achieve ambidexterity. While contextual ambidexterity enables individuals to consider both exploitative and explorative aspects of their work: when they try to be effective (doing the right things), they also think about how to be
efficient (doing the things right) (Simsek, 2009). Context refers to the processes, systems and beliefs that individual behaviors could be shaped in an organization and should be designed to enable and encourage every individual to make a choice between exploitation and exploration in their work (Ghosal, & Bartlett, 1994). Based on the work of Ghosal and Bartlett (1994) Gibson and Birkinshaw (2004) suggest that context is characterized by a combination of stretch, discipline, support and trust to facilitate contextual ambidexterity. In paragraph 2.3 an elaborate overview is given of the variables that influence contextual ambidexterity.

2.1.1 Research model of ambidexterity

Nowadays there are different streams of research that focus on ambidexterity which are given in figure 1. Ambidexterity is discussed in context such as organizational learning, technological innovation, organizational adaption, strategic management and organizational design. Raisch and Birkinshaw (2008) give a comprehensive model that integrates the antecedents, environmental influences, moderators and performance outcomes of organizational ambidexterity. This model helps to give an overview of different research streams. The problem statement for this thesis is how management can support employees with finding balance between exploitation and exploration. The subjects of interest for this thesis are organizational antecedents and organizational ambidexterity.

![Figure 1. A framework of understanding ambidexterity research (adapted from Raisch and Birkinshaw, 2008)](image)
2.1.2 Ambidexterity and performance

Simsek, Heavey, Veiga and Souder (2009, p. 881) expect strategic performance benefits from ambidexterity. “From a resource-based view a behavioral context in which exploitation and exploration can simultaneously flourish might be considered as a valuable, rare, and costly to imitate resource, and therefore a potential source of competitive advantage.” Gibson and Birkinshaw (2004, p. 209) note that such capabilities are “complex, causally ambiguous, widely dispersed, and quite time-consuming to develop.”

Tushman and O’Reilly suggest that organizations that are ambidextrous are more likely to achieve superior performance than organizations that focus on either exploitation or exploration. Volberda and Lewin (2003) found that organizations that pursue exploration run an inherent risk because their returns are hard to estimate and may take a long time to materialize. These organizations assign their scarce resource to exploration without benefitting from exploitation. Previous research has increasingly argued that successful firms “engage in enough exploitation to ensure the organization’s current viability and engage in enough exploration to ensure future viability” (Levinthal & March, 1993, p. 105). Raisch and Birkinshaw (2008) investigated the empirical evidence of the relationship between ambidexterity and performance. In paragraph 2.4 a summary of the empirical evidence of a positive relationship between ambidexterity and performance is given.

2.1.3 Central tensions of organizational ambidexterity

In paragraph 2.1.1 the overall picture of research streams is given. This paragraph provides insight in organizational ambidexterity. Raisch et al. (2009) found that despite increasing interest in the concept of ambidexterity, there are still four “central tensions” of organizational ambidexterity to enable further progress in research on ambidexterity. Their tensions are given below.

2.1.3.1 Differentiation versus integration

The first tension relates to differentiation and integration as complementary or alternative pathways to ambidexterity. Differentiation means that exploitation and exploration activities are divided into different organizational units. Integration means that the exploration and exploitation activities are integrated in the same organizational unit. Raisch et al. (2009) have three observations concerning integration versus differentiation. First, integration and differentiation are complementary mechanisms for achieving organizational effectiveness. Secondly, the balance between integration and differentiation is likely to vary per activity. Thirdly, managerial attention is needed for the tension between integration and differentiation.
2.1.3.2 Individual versus organizational

The second tension is at the level of ambidexterity, does ambidexterity manifest itself at the individual or organizational level. Most studies focus on ambidexterity at the organizational level, the tension that ambidexterity creates is solved at the next organizational level down (Raisch, & Birkinshaw, 2008). A business unit becomes ambidextrous by creating two sub units with one unit focusing on exploration and the other unit is focusing on exploitation. Other studies focus on the individual level of ambidexterity. For example, Mom, van den Bosch and Volberda (2007) found that some managers simultaneously engage in high levels of exploitation and exploration activities. Managers who are ambidextrous acquire more top-down and bottom-up knowledge flows, or top-down and horizontal knowledge flows than other managers. Raisch et al. (2009) have three observation concerning individual versus organization. Firstly, managers can exhibit ambidexterity by simultaneously engaging in exploration and exploitation activities. Secondly, the extent to which managers are ambidextrous varies within and across contexts. This depends on organizational context and personal characteristics of the manager involved. Thirdly, organizational ambidexterity is influenced by, not limited to, its member’s cumulative personal ambidexterity. Recent studies also show that exploration and exploitation are not mutually exclusive at the firm-level (He and Wong, 2004), business unit-level (Gibson and Birkinshaw, 2004) or individuals level (Mom, et al. 2007).

2.1.3.3 Static versus dynamic

The third tension relates to static versus dynamic perspectives on ambidexterity. Researchers have provided a range of solutions that will help organizations to become ambidextrous (Gibson, & Birkinshaw, 2004; Tushman, & O’Reilly, 1996). According to Raisch et al. (2009 p. 668) these studies take a static perspective: “organizations become ambidextrous by adopting certain configurations”. Other researchers found that an organization only can be ambidextrous if management constantly and intentionally reviews their firm resources to balance exploitation and exploration activities. For example, Schreyögg and Kliesch-Eberl (2007) found the interaction of exploitation and exploration is to become a dynamic capability over time. Raisch et al. (2009) have three observations concerning static versus dynamic. Firstly, managing ambidexterity is more a dynamic process than a static process. Secondly, different solutions, including contextual and structural, are required to sustain ambidexterity. Thirdly, simultaneously and sequential attention to exploration and exploitation will help organizations to become ambidextrous.

2.1.3.4 Internal versus external

The fourth tension relates to internal versus external perspective on ambidexterity. Some researchers focus on the exploitation and exploration activities within the organization. For example, Benner and Tushman (2003) found that the externalization of exploitation or exploration processes
may be harmed by the difficulties of realizing strategic integration between independent firms. They focus on the internal perspective of ambidexterity. Other researchers focus on the external perspective of ambidexterity. For example, Lin, Yang and Demirkan (2007) found that inter-organizational activities like strategic alliances can enable both exploitation and exploration activities. They focus on the external perspective of ambidexterity. Raisch et al. (2009) have three observations concerning internal versus external focus on ambidexterity. Firstly, an organization's ability to integrate internal and external knowledge may influence ambidexterity. Secondly, the ability to integrate external knowledge depends on a combination of external brokerage and internal absorptive capacity. Thirdly, ambidexterity can be supported by social networks that contrast internal and external as well as strong and bridging ties.

2.2 Balance between exploitation and exploration

According to March (1991, p. 85) the essence of exploitation is the “refinement and extension of existing competences, technologies, and paradigms. Its returns are positive, proximate, and predictable”. The essence of exploration is “experimentation with new alternatives. Its returns are uncertain, distant, and often negative”. The distance in time and space between learning and the realization of returns is generally greater in the case of exploration than in the case of exploitation (March, 1991). Both exploration and exploitation are necessary for organizations and must compete for the scarce resources of a firm. As result organizations make sometimes explicit choices between exploration and exploitation based on calculated decisions about alternative investments and competitive strategies. Sometimes the choice between exploration and exploitation is more implicit. For example in the way targets are set or the way the incentive program is made. March (1991, p. 71) found that “understanding the choices and improving the balance between exploitation and exploration are complicated by the fact that returns from the two options vary not only with respect to their expected values, but also with respect to their variability, their timing, and distribution within and beyond the organization”. The difficulty is to specify the appropriate trade-off between exploitation and exploration (March, 1991). According to Levinthal and March (1993) an organization that only focuses on exploitation will eventually suffer from obsolescence and an organization that solely focuses on exploration will never have the gains from the knowledge they obtained. An organization needs to engage in sufficient exploitation to ensure its current viability and in the meantime devote enough energy to ensure future’s viability. To maintain an organization in the long run means a balance between exploration and exploitation. However, it is hard to specify the appropriate balance (Levinthal & March, 1993). Lavie, Stettner and Tushman (2010) found that at any given moment exploration and exploitation are at odds, but over time exploration generates the
opportunities that the organization can exploit. In turn, exploitation produces the income that is necessary to for investments in exploration.

2.3 Contextual ambidexterity

In paragraph 2.1 two types of organizational ambidexterity were distinguished. Firstly, structural ambidexterity which focuses on the structure of an organization. Secondly, contextual ambidexterity which focuses on the systems and processes of an organization. This thesis focuses on contextual ambidexterity to answer the research question.

Following the work of Gibson and Birkinshaw (2004), the central question regarding contextual ambidexterity is: How does a business unit becomes ambidextrous? Previous research does not give an overarching view of the variables that influence ambidexterity. Addler et al. (1999) found that worker training and trust in the relationship with management is important to become ambidextrous. Tushman and O’Reilly (1996) found that a common culture and supportive managers are key factors to become ambidextrous. Gibson and Birkinshaw (2004) pointed that previous research on (contextual) ambidexterity did not fully cover all variables that influence contextual ambidexterity. Gibson and Birkinshaw (2004) suggest that variables that influence contextual ambidexterity are characterized by discipline, stretch, support and trust. Ghoshal and Bartlett (1994) researched these variables in a longitudinal field study. They indentified discipline, stretch, support and trust as the primary dimensions of organizational context. Ghoshal and Bartlett (1994) defined organizational context as “the way in which the four behavior-framing attributes of discipline, stretch, trust and support are created and reinforced by a variety of macro and micro level actions taken by managers at all levels of the organization” (p. 96). To deepen our understanding of the variables that influence organization context the four different dimensions are described.

2.3.1 Discipline

Discipline induces workers to voluntarily meet all expectations generated by their explicit or implicit commitment. According to Ghoshal and Bartlett (1994) there are three attributes that contribute to discipline in an organization. Firstly, an organization should have a clear set of standards which are acceptable for the organization. Clear standards in performance and behavior ensure more commitment and acceptance to the standards. Secondly, an organization should focus on increasing frequency and quality of feedback throughout the organization. Quality of feedback creates openness, honesty and candor in the review process. The third contributor to discipline is the consistent application of sanctions. Ghoshal and Bartlett (1994) give that discipline should be a way of life, a norm applicable to all tasks, rather than compliance with a well-defined set of contracts within the organization.
2.3.2 Stretch

Stretch is an attribute of context that induces workers to voluntarily strive for more, rather than less, ambitious objectives. According to Ghoshal and Bartlett (1994) there are three attributes that contribute to stretch in an organization. Firstly, a shared ambition throughout the organization will contribute to stretch. The same process that leads to establishing clear standards will help to formulate a shared ambition. The visible celebration of some early successes plays a role in a shared ambition in combination with focusing the entire organization on just a couple of key performance indicators. Secondly, an organization should have a collective identity. A mission statement can help to form a collective identity. Bartkus, Glassman and McAfee (2000) found that a mission statement inspires and motivates employees. Thirdly, giving a personal meaning to the way in which individuals contribute to the organization. Breaking down the targets to the individual level gives employees a clear picture how their performance contributes to the firms’ performance. Ghoshal and Bartlett (1994) give that by developing stretch, managers can influence the aspiration levels of individuals throughout the organization in all kind of activities like improving processes and creating new products or businesses.

2.3.3 Trust

Trust is an attribute of context that induces workers to rely on the commitments of others. According to Ghoshal and Bartlett (1994) there are three attributes that contribute to trust in an organization. Firstly, the decision making process requires fairness and equity. Secondly, individuals should be involved in the decisions that affect them. If individuals are involved in the decision making they are exposed to the broader rationale of the decision and this will help in case the decision is contradicting the interest of the individual. Thirdly, staff positions with persons who have and are seen to have the required capabilities.

2.3.4 Support

Support is an attribute of context that induces employees to lend assistance and countenance to others. According to Ghoshal and Bartlett (1994) there are three attributes that contribute to support in an organization. Firstly, give employees access to resources. Management should encourage the possibility for employees to get access to data or processes from other units. Secondly, give employees autonomy. By decentralizing the employees get more autonomy to act for their own without lot of management control. Thirdly, give employees guidance and help. An organization should establish a norm of mutual help across the organization.
2.3.5 Organization context

Ghosal and Bartlett (1994) found that an organization needs to foster discipline and stretch to encourage individuals to push for ambitious goals, but in the meantime the organization also needs to give support and trust to ensure that it happens in a cooperative environment. Organization context can be conceptualized as a balance between performance management (stretch and discipline) and social context (trust and support). Too much emphasis on the performance management will create burnout and disillusion among employees. But too much emphasis on the social context creates an atmosphere in which no work gets done. A good organization context creates a supportive environment that inspires an individual to do whatever it takes to deliver results (Gibson & Birkinshaw, 2004).

Gibson and Birkinshaw (2004) extend the framework of Ghosal and Bartlett (1994) by arguing that when a supportive organization context is created, individuals engage in both exploration and exploitation activities and that leads to contextual ambidexterity.

2.3.6 Managers ambidexterity

O’Reilly and Tushman (2004) give that one of the most important lessons from previous research is that ambidextrous organizations need ambidextrous senior teams and managers. According to Mom et al. (2009) “there is a lack of conceptually and empirically validated understanding about exploration and exploitation at the manager level of analysis” (p. 911). Mom et al. (2009) found that firm or unit level ambidexterity originates in the individual ambidexterity of managers to a large extent. To further investigate the influence of ambidextrous managers, chapter three will zoom in on the important role that managers take in getting an organization ambidextrous.

2.4 Empirical evidence

According to Raisch and Birkinshaw (2008), Addler et al. (1999) were one of the first researchers to find empirical evidence that ambidexterity has a positive influence on performance. Addler et al. (1999) found that exploitation and exploration coexisted in Toyota’s product development and process development. He and Wong (2004) were the first to formally test the ambidexterity hypothesis. Based on a study on 206 manufacturing firms, from Malaysia and Singapore, they found evidence that the interaction between exploration and exploitation strategy is positively related to sales growth and that the relative imbalance between exploration and exploitation is negatively correlated to sales growth. Gibson and Birkinshaw (2004) were the first who researched ambidexterity at the business unit level. Based on a study from 4.195 individuals from 41 business units, from companies across the world, they found strong evidence that contextual ambidexterity is positively correlated with performance. Lubatkin, Simsek, Ling and Veiga (2006) tested organizational
ambidexterity on performance across 139 small- and medium-sized firms in the United States. They found that the joint pursuit of an exploitative and explorative focus positively correlated with performance.

Venkatraman, Lee and Iyer (2007) tested the ambidexterity performance link with using a sample of 1005 software firms from all over the world. They did not find empirical evidence that there is a link between performance and ambidexterity. Instead, they found evidence that temporal cycling between exploitation and exploration is positively correlated to firm performance.

This thesis does not test the relationship between ambidexterity and performance. Based on the previous paragraph the assumption is that the ambidexterity affects performance in a positive way.

2.5 Summary

This chapter gives an overview of the current theory regarding ambidexterity. Ambidexterity means an organization’s “ability to be aligned and efficient in its management of today’s business demands while simultaneously being adaptive to changes in the environment” (Raisch, Birkinshaw, 2008, p. 375). Chapter 2 starts with the evolution of ambidexterity, it makes a distinction between structural and contextual ambidexterity. Structural ambidexterity is seen as developing structural mechanisms by the organization to establish ambidexterity. Contextual ambidexterity is seen as the behavioral capacity to create ambidexterity within an organization. Ambidexterity is all about the balance between exploitation and exploration. March (1991) gives that the essence of exploitation is the “refinement and extension of existing competences, technologies, and paradigms. Its returns are positive, proximate, and predictable”. The essence of exploration is “experimentation with new alternatives. Its returns are uncertain, distant, and often negative”. According to Levinthal and March (1993) an organization that only focuses on exploitation will eventually suffer from obsolescence and an organization that solely focuses on exploration will never have the gains from the knowledge they obtained. Finding the appropriate balance between exploitation and exploration is hard to specify. Gibson and Birkinshaw (2004) suggest that variables that influence contextual ambidexterity are characterized by discipline, stretch, support and trust. There is empirical evidence that contextual ambidexterity leads to superior performance in the long run.
3. **Theory**

Mintzberg (1973) states that processing information is a very significant activity for managers. Managers are the focal point for a certain kind of organizational information and responsible for the transmission of information. O’Reilly et al. (2010) found that managers at all different levels influence strategic initiatives and implementation, therefore managers at all levels within the organization fall within the scope of this thesis. This chapter focuses on the knowledge flows that are needed for managers to be ambidextrous and provides the hypotheses and theoretical framework.

### 3.1 Management and ambidexterity

#### 3.1.1 Characteristics of ambidextrous managers

Mom et al. (2009) found that there are three related characteristics of ambidextrous managers. First, ambidextrous managers host contradictions. That is, managers have the “motivation and ability to be sensitive to, to understand and to pursue a range of conflicting opportunities, needs and goals” (Mom, et al., 2009, p. 813). An example from the literature is from Burgelman (2002). He researched the balance between exploration and exploration in organizational learning at Intel Corporation and found that ambidextrous managers search for new market needs and technological opportunities while being sensitive to reinforce current business. O’Reilly and Tushman (2004) give that ambidextrous managers are focused on indentifying short term and long term opportunities.

Secondly, ambidextrous managers are multitaskers. This means, ambidextrous managers “fulfill multiple roles and conduct multiple different tasks within a certain period of time” (Mom, et al., 2009, p. 813). Adler (1999) researched the Toyota production system and found that ambidextrous managers typically act outside the confines of their own job.

Thirdly, ambidextrous managers both refine and renew their knowledge, skills and expertise. This means, ambidextrous managers “acquire and process different kinds of knowledge and information” (Mom, et al., 2009, p. 814). Holmqvist (2004) researched the learning process of exploitation and exploration at a mayor Scandinavian software producer and found that ambidextrous managers could enter an explorative process from an exploitative process of routines to create new sources of experiences. On the other hand, ambidextrous managers could generate routinization from explorative processes to create reliability in experience.

Raisch et al. (2009) give that an “individual’s to act ambidextrously will have a cumulative effect on the organization’s ambidexterity. However, organizational ambidexterity is different from the sum of its members’ personal ambidexterity” (p. 688). Tushman and O-Reilly (1996) found that a relative small number of ambidextrous managers could integrate exploitative and explorative outcomes
generated in different parts of the organization by individuals that focus on exploitation or exploration activities. Raisch et al. (2009) give that ambidexterity is likely to be a function of closely interrelated individual and organizational effects—but in most cases more than the sum of the individual activities.

3.1.2 Knowledge and ambidexterity

Paragraph 3.1.1 shows that refining and renewing knowledge is very important for ambidextrous managers. This paragraph zooms in on different knowledge flows within an organization. According to the Oxford dictionaries knowledge can be defined as: facts, information, and skills acquired through experience or education. Schulz (2001) gives that organizational knowledge refers to “knowledge and information held by an organization that all, or parts of the organization share and that is frequently stored in standard operating procedures, routines or rule” (p. 662).

Studies of organizational learning indicate that the essence of exploration is “creating variety in experience which is associated with broadening existing knowledge base” (Mom et al., 2007, p. 912). The essence of exploitation activities is “creating reliability in experience which is associated with deepening a manager’s existing knowledge base” (Mom et al., 2007, p. 913). The knowledge processes of exploitation and exploration are fundamentally different because they use or need different administrative routines and managerial behavior. Exploitation involves learning from a top-down process in which the top management moves to institutionalize the routines and behaviors that are most suited for refining current competencies. In contrast, exploration generally involves bottom-up learning in which the top management team is persuaded to change old routines and commitment to new action (Floyd, & Lane, 2000; Lubatkin, et al., 2006; Rivkin, & Siggelkow, 2003). Other research points out that exploitation and exploration activities are related to horizontal knowledge flows (Nonaka, 1994; Schulz, 2003). Mom et al. (2007) combined the top-down, bottom-up and horizontal knowledge flows to investigate knowledge inflows at managers and the influence of these knowledge flows on ambidexterity of the organization.

Notions of knowledge flows vary somewhat in the literature (Schulz, 2003). Some authors focus on certain types of knowledge flows like the transfer of skills and technology between organizational subunits (Tsaj, 2002). Some understand knowledge flows as a multistage process, e.g., involving initiation, implementation, ramp-up, and integration (Szulanski, 1996). In this thesis, a fairly broad notion of knowledge flows from Schulz (2003) is used. “Knowledge flows are understood as the aggregate volume of know-how and information transmitted per unit of time. The concept is meant
to capture the overall amount of know-how and information transmitted between subunits in all kinds of ways, e.g., via telephone, e-mail, regular mail, policy revisions, training, meetings, job rotation, shared technologies, and reviews of prototypes” (p, 444).

The difference between knowledge outflow and knowledge inflow is the focal point of analysis. When the knowledge outflow is investigated the knowledge donor is the focal point of analysis. In contrary, the focal point of analysis with knowledge inflows is the receiver of information. This thesis will focus on the knowledge inflows to understand where the manager acquires his knowledge across the organization. Both the donor and the receiver of knowledge may be the initiator of the knowledge flow.

Top-down knowledge inflows are associated with knowledge coming from persons or units at higher hierarchical levels than the manager. Within large firms with multiple units the knowledge flow is normally confined to the vertical chains of the organizational units. The vertical chains of units could be segmented in several ways for example: geographical, functional or technological. According to Winter and Szulanski (2001) the structure of the organization implies that the scope of the knowledge inflow is narrow. The top-down knowledge inflow tends to possess a clear understanding of the cause and effect relationship and the improvement of current activities is normally well-known (Mom, et al., 2007). The top-down knowledge inflow deepens the knowledge of the manager and this is associated with exploitation. Mom et al., (2007) confirmed with empirical evidence that top-down knowledge inflows are positively related to a manager’s exploitation activities. The top-down knowledge inflow had no effect on a manager’s exploration activities.

Bottom-up knowledge inflows are associated with knowledge coming from persons or units at lower hierarchical levels than the manager. Bottom-up knowledge inflows are normally ad hoc, unpredictable and random. It normally requires qualitative adjustment to current activities. According to Brady and Davies (2004) bottom-up knowledge will help higher level managers to understand changes regarding demand, products or technology. The bottom-up knowledge inflow will create a variety in experience and this is associated with exploration. Mom et al., (2007) found empirical evidence that bottom-down knowledge inflows are positively related to a manager’s exploration activities. The bottom-up knowledge inflow had no effect on a manager’s exploitation activities.

Horizontal knowledge inflows are associated with knowledge coming from persons or units at the same hierarchical level as the manager involved. Tsai (2001) found that horizontal knowledge flows
are acquired by cross-functional interfaces characterized by personal reciprocal activities. The knowledge from the horizontal flow is rather ambiguous, complex and tacit (Mom, et al., 2007). The horizontal knowledge inflow will help the manager to interpret complex issues and to build understanding of newly acquired knowledge (Jansen, van den Bosch, & Volberda, 2005). The horizontal knowledge inflow will create a variety in experience and this is associated with exploration. This is confirmed by Mom et al., (2007) who found evidence that horizontal knowledge inflows are positively related to a manager’s exploration activities. The horizontal knowledge inflow had no effect on a manager’s exploitation activities.

Mom et al. (2007) revealed that when the top-down knowledge inflow increases within the organization without enabling bottom-up or horizontal inflows that it is likely that managers’ increase their exploitation activities without increasing their exploration activities. This would lead to exploitation driving out exploration. In contrary, when an organization is stimulating bottom-up and/or horizontal knowledge inflows within an organization, without stimulating top-down knowledge flows it is likely that manager’s increase their exploration activities without increasing their exploitation activities. This would lead to exploration driving out exploitation. Mom et al. (2007) indicate that the more a manager acquires both top-down and bottom-up and/or horizontal knowledge inflows, the higher the levels of both exploration and exploitation activities a manager may engage in.

3.2 Hypotheses

This paragraph treats four hypotheses that are used to answer the problem statement. Paragraph 2.3 gives that Gibson and Birkinshaw (2004) suggest that variables that influence contextual ambidexterity are characterized by performance management (discipline and stretch) and social context (support and trust). Ghoshal and Bartlett (1994) researched these variables in a longitudinal field study. They indentified discipline, stretch, support and trust as the primary dimensions of organizational context. Moreover they defined organizational context as “the way in which the four behavior-framing attributes of discipline, stretch, trust and support are created and reinforced by a variety of macro and micro level actions taken by managers at all levels of the organization” (p. 96). Research by Gibson and Birkinshaw (2004) revealed a positive relationship between stretch, discipline, trust and support and ambidexterity. This thesis tests if there is a positive relationship between the four attributes and contextual ambidexterity. This leads to the following hypothesis:
Hypothesis 1

The more that the organizational context is characterized by an interaction of trust, support, discipline and stretch the higher the level of ambidexterity.

In paragraph 3.1.2 it was found that according to Winter and Szulanski (2001) the structure of the organization implies that the scope of the top-down knowledge inflow is narrow. The top-down inflow tends to possess a clear understanding of the cause and effect relationship and the improvement of current activities is normally well-known (Mom, et al., 2007). The top-down knowledge inflow will deepen the knowledge of the manager and this is associated with exploitation. This leads to the following hypothesis:

Hypothesis 2

Top-down knowledge inflows of a manager will be positively related to the extent to which this manager engages in exploitation activities.

Paragraph 3.1.2 states that according to Brady and Davies (2004) bottom-up knowledge helps higher level managers to understand changes regarding demand, products or technology. The bottom-up knowledge inflow will create a variety in experience and this is associated with exploration. The horizontal knowledge inflow will help the manager to interpret complex issues and to build understanding of newly acquired knowledge (Jansen, van den Bosch, & Volberda, 2005). The horizontal knowledge inflow will create a variety in experience and this is associated with exploration. Combining horizontal and bottom-up knowledge inflows will lead to the following hypothesis:

Hypothesis 3

Bottom-up and horizontal knowledge inflows of a manager will be positively related to the extent to which this manager engages in exploration activities.

At level of the business unit the interaction of the four attributes discipline, stretch, trust and support will increase the level of ambidexterity. At the individual level top-down, bottom-up and horizontal knowledge inflows will increase the level of ambidexterity. This thesis tests if the knowledge inflow, performance management context and social context will influence ambidexterity. This leads to the following hypothesis:
Hypothesis 4

*Performance management context, social context and knowledge inflows will have a positive effect on the level of ambidexterity.*

### 3.3 Theoretical framework

In paragraph 2.3 the variables that influence ambidexterity are given. Following the work of Gibson and Birkinshaw (2004) this thesis focuses on the performance management and social context that influences ambidexterity. The assumption in this thesis is that knowledge inflow moderates the relation between context and ambidexterity. Gibson and Birkinshaw (2004) used ambidexterity as a mediator between the four variables (stretch, discipline, trust and support) of context and business unit performance. They argue that “contextual ambidexterity is seen as a meta-capability that is developed gradually over time through the interaction of the various features of organization context” (Gibson, & Birkinshaw, 2004, p. 214). The development of ambidexterity takes many years. Gibson and Birkinshaw (2004) give that it would be wrong to suggest that an organization could implement the four variables of organization context and that the performance would instantly be superior.

Paragraph 2.4 gives the empirical evidence that there is a relationship between ambidexterity and performance. Due to limited resources this thesis does not investigate the relationship between ambidexterity and performance. Following the work of Gibson and Birkinshaw (2004) this thesis focuses on the relationship between context and ambidexterity. The resulting framework is given in figure 2.

![Theoretical framework diagram](image)

**Figure 2. Theoretical framework.**

In chapter 4 the methods that are used to predict the relationship are given.
3.4 Summary

This chapter gives an overview of the individual capacities a manager should have to be ambidextrous. Mom et al. (2009) found three characteristics that ambidextrous managers combine. In paragraph 3.1 the influence of knowledge inflows on ambidexterity is described. Based on the theory in chapter 2 and the theory of knowledge inflows in paragraph 3.2 four hypotheses are formulated. The hypotheses are used to construct a theoretical framework. The assumption in this thesis is that performance management context, social context and knowledge inflows have a positive effect on ambidexterity.
4. Research Method

Chapter 4 deals with the research methods that are used. This chapter describes the research setting of the study. The dependent and independent variables are explained. There are different measures available to measure the different variables. Choices are made regarding the measurement of the different variables. At the end of this chapter the population, sample and the response to the survey are shown.

4.1 Research setting

This study is undertaken to search for variables that influence contextual ambidexterity. The goal is to find and test independent variables that influence contextual ambidexterity.

The study takes place at Rabobank Tilburg en omstreken (RTeo). Secondary data is used to formulate the hypotheses. Primary data is used to test the hypotheses. The study is cross-sectional which means that data is gathered just once. The population that is investigated are the employees of RTeo. The sample frame is delivered by the HR department and contains all the employees who work directly for RTeo. Chapter 1 gives that the sample design would be a disproportionate stratified random sample. Given the small population of employees in a managerial role and an expected response rate of 30 percent all employees are taken into the sample.

4.2 Analysis model

The theoretical framework of paragraph 3.3 is tested with a regression analysis. The independent variables: performance management context, social context and knowledge inflows are hypothesised against the dependent variable ambidexterity. The variables are measured at an interval scale which makes regression analysis a good tool to test the hypothesis. An F-test is conducted to test the significance of the whole model. On the independent variables, a t-test is conducted to indicate the significance of the variable in relation to ambidexterity. To indicate the completeness of the model, the $R^2$ is used. The data is processed in the statistical program SPSS.

4.3 Dependent variable

The dependent variable in this thesis is contextual ambidexterity. There is no widely accepted measure for ambidexterity (Lubatkin, et al., 2006). Several researchers measure ambidexterity at a different level. For example, some researchers measure ambidexterity at the firm level (He, & Wong, 2004; Benner, & Tushman, 2003; Lubatkin, et al., 2006). He and Wong (2004) designed a measure primarily based on product design differences having to do with exploration and exploitation. Benner and Tushman (2003) conceptualized ambidexterity as encompassing more than just product design
and proposed a two-dimensional definition, entailing exploration and exploitation differences along an innovation’s proximity to the firm’s current technological/product trajectory. Lubatkin et al., (2006) adapted the measure from He and Wong (2004) to capture the two dimensions of Benner and Tushman (2003).

Gibson and Birkinshaw (2004) measure ambidexterity at the business unit level as a multidimensional construct comprised of the non substitutable combination of alignment and adaptability. Gibson and Birkinshaw (2004) measure alignment and adaptability independently and then create a multiplicative interaction term of alignment and adaptability. The multiplicative interaction term is formulated as contextual ambidexterity. Raisch et al. (2008) use alignment and adaptability interchangeable with exploitation and exploration.


The goal of this thesis is to measure ambidexterity at the business unit level. Therefore the measure of Gibson and Birkinshaw (2004) seems to be the best measure to determine the dependent variable ambidexterity. Gibson and Birkinshaw (2004) used individuals as raters of business unit characteristics; this means that the assumption is that the responses of all the individuals represent business unit characteristics. Conceptually, this makes sense, given that individual employees are most familiar with the extent to which their business unit exhibits certain attributes of ambidexterity. Consistent with Floyd and Lane’s (2000) assertion that two on exploitation and exploration orientations are “inseparable”, Gibson and Birkinshaw (2004) have combined both measures to create a measure of ambidexterity.

4.3.1 Ambidexterity indicator
The work of Gibson and Birkinshaw (2004) is used for constructing the scales that measure ambidexterity. Two different sets of scales are used to measure to concept of adaptability and alignment. Gibson and Birkinshaw (2004) give that respondents in a managerial role are best informed about ambidexterity. Alignment is captured with three questions\(^1\) by asking employees in a

\(^1\) The questions which measure alignment and adaptability are noted in appendix I.
managerial role to indicate the degree to which management systems\(^2\) work coherently together towards the same goal. Adaptability is captured with three questions by asking employees in a managerial role to indicate the degree to which management systems have the capacity to reconfigure activities in the business unit to meet changing demands. The concept of ambidexterity is captured by computing the multiplicative interaction between alignment and adaptability.

4.4 Independent variables

There are several variables that influence contextual ambidexterity. In this research three independent variables are determined. The independent variables are performance management context, social context and knowledge inflows.

4.4.1 Performance management context

Gibson and Birkinshaw (2004) used the work of Ghosal and Bartlett (1994) to develop multi-item scales to represent the dimensions of stretch and discipline. Gibson and Birkinshaw (2004) revealed by performing a factor analysis that it was not possible to identify distinct constructs to identify stretch and discipline. They found that the combination of stretch and discipline was distinctive. Based on the factor analysis they developed, the variable, performance management context. Performance management context contains stretch and discipline. There are no other measures found in the literature to measure performance management context. This thesis uses the measure of Gibson and Birkinshaw (2004) to test the independent variable performance management context. Performance management is captured with seven questions by asking employees, in non-managerial and managerial roles, to which degree the business unit encourage individuals to push for ambitious goals.

4.4.2 Social context

Gibson and Birkinshaw (2004) used the work of Ghosal and Bartlett (1994) to develop multi-item scales to represent the dimensions of trust and support. Gibson and Birkinshaw (2004) revealed by a factor analysis that it was not possible to identify distinct constructs to identify trust and support. They found that the combination of trust and support was distinctive. Based on the factor analysis they developed social context. Social context contains trust and support. There are no other measures found in the literature to measure social context. This thesis uses the measure of Gibson and Birkinshaw (2004) to test the independent variable social context. Social context is captured with

\(^2\)Management systems provide the mechanisms of decision making, communication and control that allow organizations to solve the problems of achieving both coordination and cooperation. The most important systems are: management information systems, financial systems, HR management systems and the strategic planning systems. The relation between management systems and organizational structure is similar to that of computer networks. The hardware is the structure and the software is the system that make the network operational (Grant, 2008).
nine questions by asking employees, in non-managerial and managerial roles, to which degree the business units create a cooperative environment.

4.4.3 Knowledge inflows
The work of Mom et al. (2007) is used to construct the scales that measure knowledge inflows. Mom et al. (2007) used the work of Gupta and Govindarajan (2000) and Schulz (2001) to construct scales that measure knowledge inflows. The question to which manager’s responded was ‘to what extent did you receive or gather knowledge from ...’ Mom et al. (2007) used three questions to measure top down knowledge inflows, three questions to measure horizontal knowledge flows and two questions to measure bottom up knowledge flows. Mom et al. (2007) conducted a factor analysis that confirmed that the independent variables were properly constructed. This thesis uses the measure of Mom et al. (2007) to test the independent variable knowledge inflows.

4.5 Control variables
Mom et al. (2007) and Gibson and Birkinshaw (2004) used different firms as a control variable to control for firm-level effect. The subject for this thesis is only one business unit; therefore it is not possible to use different firms as a control variable. In this paper the following control variables are used. Firstly, the respondents in a managerial role are separated into 2 groups. The first group contains the employees at senior- and middle management, the second group contains the employees in lower management. Secondly, respondents with missing values were separated. Not all respondents filled the survey completely; this is due to the fact that some questions regarding knowledge inflows could not be answered due to their hierarchical level. The missing values have been replaced with the average measured at the other respondents. To check for this effect the groups are dived in respondents who answered all questions and respondents who missed one or more questions.

4.6 Sample
The population in this study contains the employees of RTeo. At the moment that the survey was send, 352 people were employed at RTeo. The population is divided into two groups. There are 27 people employed in a managerial role and there are 325 people employed in a non-managerial role. The population is delivered by the HR department and consist all the employees employed. The procedure to obtain data consisted of: Sending a survey by email to two different groups. The first group contains the employees in a managerial role. The second group contains the employees in a non-managerial role. After 1 one week a reminder mail was send to pursue employees to respond. The number of survey respondents in the managerial group is 23. This means a response rate of 85
percent. The number of survey respondents in the non-managerial group is 160. This means a response rate of 49 percent.

The data is collected using a comprehensive survey, all items required five-point Likert-style responses. The independent variables, social context and performance management context, are measured for all respondents. The independent variable, knowledge inflow, is measured for the respondents in a managerial role. The dependent variable, ambidexterity, is measured for the respondents in a managerial role. Gibson and Birkinshaw (2004) give that respondents in a managerial function are best informed about ambidexterity.

4.7 Summary

The research takes place at Rabobank Tilburg en omstreken. The hypotheses are tested with a regression model. Work of Gibson and Birkinshaw (2004) and Mom et al. (2007) is used to construct the measurement to measure the independent and dependent variables. The independent variables social context and performance context are measured at all the employees of RTEo. The independent variable, knowledge inflow, and the dependent variable ambidexterity are measured at employees in a managerial role.
5. Results

5.1 Descriptive statistics

The study contains 181 respondents. The respondents are categorized in two groups; respondents in a managerial role and respondents in a non-managerial role. As explained in chapter four, the independent and dependent variables are investigated in the group of employees in a managerial role. The independent variables social context and performance management context are investigated for all the employees. All data is collected with a five-point Likert-style response. Table 1 shows descriptive statistics of all variables used in this thesis.

Table 1. descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Function</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Managerial</td>
<td>Non-managerial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>N</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>N</td>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Social Context</td>
<td>3.6581</td>
<td>181</td>
<td>.53831</td>
<td>3.9394</td>
<td>.49421</td>
<td>3.6191</td>
<td>159</td>
<td>.53396</td>
</tr>
<tr>
<td>Performance Context</td>
<td>3.4825</td>
<td>180</td>
<td>.59358</td>
<td>3.3741</td>
<td>.65850</td>
<td>3.4969</td>
<td>159</td>
<td>.58524</td>
</tr>
<tr>
<td>Top-down knowledge</td>
<td>3.5714</td>
<td>7</td>
<td>.80999</td>
<td>3.5714</td>
<td>.80999</td>
<td>3.5714</td>
<td>7</td>
<td>.80999</td>
</tr>
<tr>
<td>Horizontal knowledge</td>
<td>3.2121</td>
<td>22</td>
<td>.93461</td>
<td>3.2121</td>
<td>.93461</td>
<td>3.2121</td>
<td>22</td>
<td>.93461</td>
</tr>
<tr>
<td>Alignment</td>
<td>2.7681</td>
<td>23</td>
<td>.55446</td>
<td>2.7681</td>
<td>.55446</td>
<td>2.7681</td>
<td>23</td>
<td>.55446</td>
</tr>
<tr>
<td>Adaptability</td>
<td>2.4783</td>
<td>23</td>
<td>.73736</td>
<td>2.4783</td>
<td>.73736</td>
<td>2.4783</td>
<td>23</td>
<td>.73736</td>
</tr>
<tr>
<td>Exploration</td>
<td>3.7565</td>
<td>23</td>
<td>.56232</td>
<td>3.7565</td>
<td>.56232</td>
<td>3.7565</td>
<td>23</td>
<td>.56232</td>
</tr>
<tr>
<td>Exploitation</td>
<td>3.8623</td>
<td>23</td>
<td>.39136</td>
<td>3.8623</td>
<td>.39136</td>
<td>3.8623</td>
<td>23</td>
<td>.39136</td>
</tr>
</tbody>
</table>

The response on top-down knowledge inflows is low. This is due to the fact that there are four hierarchical levels at RTeo and the respondents are situated in the top three hierarchical levels. If a respondent did not have a direct or indirect manager he could not respond on all the questions regarding top-down knowledge inflows.

A check on the normality of the variables gives that most variables have a normal distribution. The Shapiro-Wilk test for normal data gives a non-significant p-value for most variables which means that the data follow a normal distribution. The results are given in Appendix II. The variable social context measured at employees in a non-managerial role does not follow a normal distribution.
A Mann-Whitney test was conducted to check if the mean of social context between respondents in a managerial role and respondents in a non-managerial role is the same. This non-parametric test is conducted because the variables that are measured do not have a normal distribution. The Z-value is -2.631 and the significance (two tailed) is .009. This means that we can conclude that there is a statistically significant difference in the mean of social context between the two groups. The variance between the two groups differs. The results are presented in Appendix III.

An independent samples t-test was conducted to check if the mean of performance management context between respondents in a managerial role and respondents in a non-managerial role was the same. This parametric test is conducted because the variables that are measured have a normal distribution. Levene’s test for equality of variances is used to test if the variance between the two groups differs. The significance is .830, which is greater than .05. The assumption is that the variances are approximately equal. The T-value is -0.890 and the significance (two tailed) is .375. Consequently, it can be concluded that there is no statistically significant difference in the mean of performance management context between the two groups. The results are presented in Appendix III. Correlations amongst the variables are given in table 2.

Table 2. Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Organization context</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Performance management</td>
<td>0.88**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Social context</td>
<td>0.62**</td>
<td>0.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Ambidexterity</td>
<td>0.17</td>
<td>0.29</td>
<td>-0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Alignment</td>
<td>-0.27</td>
<td>-0.11</td>
<td>-0.39</td>
<td>0.47*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Adaptability</td>
<td>0.41</td>
<td>0.44*</td>
<td>0.11</td>
<td>0.81**</td>
<td>-0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Exploration</td>
<td>0.03</td>
<td>0.31</td>
<td>-0.46*</td>
<td>0.24</td>
<td>0.23</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Exploitation</td>
<td>-0.01</td>
<td>-0.09</td>
<td>-0.06</td>
<td>0.01</td>
<td>0.17</td>
<td>-0.11</td>
<td>0.26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Bottom-up knowledge</td>
<td>0.36</td>
<td>0.47*</td>
<td>-0.01</td>
<td>0.33</td>
<td>0.33</td>
<td>0.17</td>
<td>0.37</td>
<td>0.23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Horizontal knowledge</td>
<td>0.03</td>
<td>0.24</td>
<td>-0.28</td>
<td>0.44*</td>
<td>0.34</td>
<td>0.28</td>
<td>0.52*</td>
<td>0.27</td>
<td>0.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Top-down knowledge</td>
<td>-0.11</td>
<td>0.06</td>
<td>-0.30</td>
<td>0.13</td>
<td>0.14</td>
<td>0.03</td>
<td>0.21</td>
<td>0.49*</td>
<td>0.04</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>12. Knowledge flows</td>
<td>0.07</td>
<td>0.29</td>
<td>-0.28</td>
<td>0.46*</td>
<td>0.40</td>
<td>0.25</td>
<td>0.51*</td>
<td>0.49*</td>
<td>0.64**</td>
<td>0.83**</td>
<td>0.63**</td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01  
*n = 23  
Organizational context is the multiplicative interaction of performance management and social context. Ambidexterity is the multiplicative interaction of alignment and adaptability. Knowledge flows is the multiplicative interaction of bottom-up knowledge, horizontal knowledge and top-down knowledge.
In contrary to the results of Gibson and Birkinshaw (2004) there is no positive correlation between alignment and adaptability. This indicates that RTeo cannot achieve both simultaneously. Knowledge flows have a positive correlation with ambidexterity.

5.2 Tests of hypotheses

The variables social context and performance management context are measured into two different groups. The Mann-Whitney test and the independent samples t-test give that the mean between the group employees in a managerial role and employees in a non-managerial role differ. The variable ambidexterity is only measured for employees in a managerial role. Because the groups differ on important variables, the non-managerial group is excluded in the following tests of hypotheses.

Some respondents could not answer all questions. The missing values are adjusted with the average of what has been measured. This adjustment ensures that all hypotheses could be measured with an N of 23. Two control variables were used for the hypotheses. Firstly, the hierarchical level of the respondent. The hierarchical level is divided into senior management for the two highest levels and lower management for the lowest hierarchical level for managers. Secondly, missing values are used as a control variable. The respondents with no response on certain questions are coded into missing value or non-missing value. The missing values are adjusted with the average of the question which was measured.

5.2.1 Hypothesis 1

The first hypothesis is: The more the context is characterized by an interaction of stretch, discipline, support, and trust, the higher the level of ambidexterity.

The relationship is measured with a simple linear regression. A regression analysis is useful when you want to predict the value of the dependent variable on the basis of the independent variables. An interaction term of performance management context and social context is made to formulate the independent variable. The correlation between performance management context and social context is not significant. The dependent variable ambidexterity is measured with an interaction variable of alignment and adaptability. The correlation between adaptability and alignment is not significant. This result indicates that RTeo does not simultaneously obtain alignment and adaptability.

The relationship between the interaction of stretch, trust, support and discipline and ambidexterity is measured with a simple linear regression. The regression gives F = 1.05 with a p-value of .32

The coefficient of organization context is .20 with a T value of .42 and a p-value of .17. If a p-value exceeds .10, there is no evidence to infer that the hypothesis is true (Keller, 2005). This means that
hypothesis 1 is rejected; there is no positive relationship between an interaction of stretch, discipline, trust and support and ambidexterity.

The regression analysis gives an R square of .33 and an adjusted R square of .22. R square is the proportion of variation in the dependent variable explained by the regression model. The values of R squared range from 0 to 1. Small values indicate that the model does not fit the data well. This regression has a small R square; this means that the model does not fit the data well.

5.2.2 Hypothesis 2
The second hypothesis is: Top-down knowledge inflows of a manager will be positively related to the extent to which this manager engages in exploitation activities.

The relationship between top-down knowledge inflow and exploitation activities is measured with a simple linear regression. The regression gives F = 11.03 with a p-value of .02 (two-tailed).

The coefficient of top-down knowledge inflows is .44 with a T value of 2.69 and a p-value of .02. If a p-value lies between .01 and .05, there is strong evidence that the hypothesis is true (Keller, 2005). This means that hypothesis 2 is not rejected; there is a positive relationship between top-down knowledge inflows and exploitation activities.

The regression analysis gives an R square of .39 and an adjusted R square of .30. The value of the R square indicates that the model does not fit very well. The results are presented in Appendix V.

5.2.3 Hypothesis 3
The third hypothesis is: Bottom-up and horizontal knowledge inflows of a manager will be positively related to the extent to which this manager engages in exploration activities.

The relationship between bottom-up, horizontal knowledge inflows and exploration activities is measured with a multiple linear regression. There is a positive correlation .39 between bottom-up and horizontal knowledge inflows with a significance of .06. The regression gives F = 2.86 with a p-value of .0054 (two-tailed).

The coefficient of horizontal knowledge inflows is .31 with a T-value of 2.43 at a p-value of .03. The coefficient of bottom-up knowledge inflows is .20 with a T-value of 1.17 at a p-value of .26. If a p-value lies between 0.01 and 0.05, there is strong evidence that the hypothesis is true (Keller, 2005). This means that hypothesis 3 is not totally rejected; there is a positive relationship between
horizontal knowledge inflows and exploration activities. There is no significant positive relationship between bottom-up knowledge inflows and exploration activities.

The regression analysis gives an R square of 0.39 and an adjusted R square of 0.25. The VIF for bottom up knowledge inflows and horizontal knowledge inflows is 1.18 with a tolerance of .84. A tolerance below .10 or a VIF value above 10 indicates high collinearity (Hair, Black, Babin, Anderson and Tatham, 2006). This means that there is no multicollinearity between the independent variables. The results are presented in Appendix VI.

5.2.4 Hypothesis 4
The fourth hypothesis is: Performance management context, social context and knowledge inflows will have a positive effect on the level of ambidexterity.

The relationship between performance management context, social context, knowledge inflows and ambidexterity is measured with a multiple linear regression. An interaction term of bottom-up, horizontal and top-down knowledge flows is defined to formulate the independent variable knowledge flows. An interaction term of alignment and adaptability is made to formulate the dependent variable ambidexterity.

The regression gives $F=3.04$ with a significance of .04 (two-tailed). The coefficient of performance management is 1.17 with a T-value of 1.56 at a p-value of .14. The coefficient of social context is -.35 with a T-value of -.37 at a p-value of .72. The coefficient of knowledge inflows .03 with a T-value of 1.28 at a p-value of .22. If a p-value exceeds .10, there is no evidence to infer that the hypothesis is true (Keller, 2005). This means that hypothesis 4 is rejected; there is no positive relationship between performance management context, social context, knowledge inflows and ambidexterity.

The regression analysis gives an R square of .47 and an adjusted R square of .32. The tolerance and VIF value indicate that there is no multicollinearity. The results are presented in Appendix VII.

5.3 Summary
In this chapter the hypotheses are tested. The two groups of respondents differed in their mean. The group of employees in a managerial role is used in this chapter to test the hypotheses. There is no significant relationship between performance management context, social context and ambidexterity. There is a positive relationship between top-down knowledge inflows and exploitation. There is also a positive relationship between bottom-up, horizontal knowledge inflows and exploration. The last hypothesis could not be tested due to a small data set. The data set is
adjusted and a regression analysis is made. The positive relationship between social context, performance management contact, knowledge inflows and the dependent variable ambidexterity is not proven. In table 3 a summary of the regression analyses to test the hypotheses is given.

Table 3. regression analyses

<table>
<thead>
<tr>
<th>Summary regression analyses</th>
<th>Hypothesis 1</th>
<th>Hypothesis 2</th>
<th>Hypothesis 3</th>
<th>Hypothesis 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>β</td>
<td>b</td>
<td>β</td>
</tr>
<tr>
<td>Intercept</td>
<td>5.192</td>
<td>2.546</td>
<td>2.329</td>
<td>3.673</td>
</tr>
<tr>
<td>Main effect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational Context</td>
<td>.200</td>
<td>.274</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top-down knowledge inflow</td>
<td></td>
<td></td>
<td>.446</td>
<td>.166 **</td>
</tr>
<tr>
<td>Horizontal Knowledge inflows</td>
<td></td>
<td></td>
<td>.306</td>
<td>.496 **</td>
</tr>
<tr>
<td>Bottom-up knowledge inflows</td>
<td></td>
<td></td>
<td>.204</td>
<td>.275</td>
</tr>
<tr>
<td>Knowledge inflows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performance Management</td>
<td></td>
<td></td>
<td>1.173</td>
<td>.308</td>
</tr>
<tr>
<td>Social Context</td>
<td></td>
<td></td>
<td>-.350</td>
<td>-.71</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing value</td>
<td>4.545</td>
<td>1.572 ***</td>
<td>-.121</td>
<td>.240</td>
</tr>
<tr>
<td>Hierarchical level</td>
<td>2.560</td>
<td>1.356 *</td>
<td>-.383</td>
<td>.208 *</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-.162</td>
<td>-.140</td>
</tr>
<tr>
<td>R-squared</td>
<td>.328</td>
<td>.392</td>
<td>.390</td>
<td>.472</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>.221</td>
<td>.296</td>
<td>.250</td>
<td>.320</td>
</tr>
<tr>
<td>F improvement of fit</td>
<td>1.052</td>
<td>11.034 **</td>
<td>2.860 **</td>
<td>3.039 **</td>
</tr>
</tbody>
</table>

* p < 0.1
** p < 0.05
*** p < 0.01
6 Discussion and Conclusions

6.1 Conclusion

Organizations still face difficulties in managing exploitation and exploration at the same time, as the two tend to drive out each other (Levinthal and March, 1993; March, 1991). Organizations that could combine exploration and exploitation are considered ambidextrous. In this study the influence of the four attributes (stretch, discipline, trust, support) and knowledge inflows on ambidexterity within the business unit is addressed. Ambidexterity within a business unit is called contextual ambidexterity (Gibson & Birkinshaw, 2004). The data is conducted at Rabobank Tilburg en omstreken which is a business unit of the Rabobank Group. The main findings of this thesis include that there is a positive relationship between top-down knowledge inflows on exploitation activities from managers. This helps to understand how an organization could influence the exploitation activities of the organization. Moreover, there is a positive relationship between horizontal knowledge inflows on exploration activities of managers. This helps to understand how an organization could influence the exploration activities of the organization. Bottom-up knowledge inflows did not have a significant positive influence on exploration activities in contrary to the results of Mom et al. (2007). Further findings indicate that there is no significant influence of social context and performance management context on ambidexterity. Results from Gibson and Birkinshaw (2004) give a significant influence of organization context on ambidexterity if all firms are taken into account. However, results from their research at the individual firms indicate that in some firms there is no significant influence of organization context on ambidexterity. The low significance could be a result of a small sample size. The original sample contained 181 respondents at four different hierarchical levels of RTeo which were separated into 2 groups; employees in a managerial role and employees in a non-managerial role. The mean of social context between the two groups is not statistically the same. The group in the non-managerial role is left out the regression analysis. The small sample of 23 respondents could have influenced the significance of the different hypothesis.

The problem statement - How could the management of Rabobank Tilburg en omstreken support the employees with finding balance between exploitation and exploration could not be answered with the independent variables that are used in this thesis. There is only a significant influence on the top-down and horizontal knowledge inflows on exploitation or exploration activities. Finding the balance between exploitation and exploration with social context and performance management is proven not to be significant in this research.
6.2 Discussion

Mom et al. (2007) found three main organizational responses for combining exploitation and exploration: synthesis, temporal separation and spatial separation. Firstly, by creating organizational units in which the tensions between exploration and exploitation are reconciled. This is called synthesizing. Such organizational units combine various contradictory elements like: hard and soft processes or systems (Gibson and Birkinshaw, 2004), routine and non-routine tasks (Adler et al., 1999) and centripetal and centrifugal forces (Sheremata, 2000). These contradictory elements should encourage managers to conduct both exploration and exploitation related activities at the same time. Secondly, with spatial separation exploitation and exploration take place at different places in the organization at the same time. Benner and Tushman (2003) found that top- or corporate level manager should engage in both exploitation and exploration activities whereas business unit manager should focus on exploration or exploitation depending on the focus of the business unit. Thirdly, temporal separation which means that firms may deal with exploitation and exploration by temporary separation the two in time. Tushman and O’Reilly (1996) found that firms shift their focus over time from pursuing incremental innovations or stability to radical innovations. There is more focus on exploitation when a firm is pursuing incremental innovations or stability and more focus on exploration when a firm is pursuing radical innovations. This thesis focuses on exploitation and exploration activities at the same time in one business unit which is called synthesizing. The effects of spatial separation and temporal separation are not investigated but could have a significant influence on ambidexterity as described above.

6.3 Limitations

There are several limitations in this research. The first limitation is that it is a cross-sectional study in which perceptual scales on the different themes are measured at single informants. This means that the respondents are asked only once to answer the survey. The perceptual scale could be confusion at the respondents whether knowledge flows affect the exploitation and exploration activities of a manager, or whether the choice of activities affects the type of knowledge flows which come about. The second limitation is that the sample size (23 respondents in a managerial role) is small. A small sample size increases the chance that significant differences are false positive and that important differences are missed. The third limitation is that the influence of ambidexterity on performance is taken for granted based on previous research. The fourth limitation is that the research took place at one organization which could cause firm effects.
6.4 Recommendations

Gibson and Birkinshaw (2004) found a significant relationship between social context, performance management and ambidexterity. Mom et al. (2007) found a significant relationship between knowledge inflows and ambidexterity. In this thesis the relationship between social context, performance management and knowledge inflows is not significant. An interesting direction for future research could be a longitudinal study at different organizations to search for effects of ambidexterity that occurs in time. With a longitudinal study the effects temporal separation of ambidexterity could be investigated. Another interesting direction could be to formulate the optimal balance between exploitation and exploration under varying circumstances.
References


Appendix I

Measuring Ambidexterity with a survey

The data is collected using a comprehensive survey, and all items required seven-point Likert-style responses.

Alignment is captured by asking managers to indicate the degree to which they agreed with the following:

1. The management systems in this organization work coherently to support the overall objectives of this organization.
   *De management systemen (MS) bij de Rabobank werken samenhangend om de algemene doelstellingen van de bank te faciliteren.*

2. The management systems in this organization cause us to waste resources on unproductive activities.
   *De management systemen (MS) zorgen er voor dat er tijd en geld in niet-productieve activiteiten wordt gestoken.*

3. People in this organization often end up working at cross-purposes because our management systems give them conflicting objectives.
   *Personeel voert de verkeerde taken uit doordat de MS conflicterende doelstellingen geeft.*
Adaptability is captured by asking managers to indicate the degree to which they agreed with the following:

In welke mate ben je het eens met de volgende stellingen.

1. The management systems in this organization encourage people to challenge outmoded traditions/practices/sacred cows
   De MS moedigen personeel aan om uit de tijd geraakte heilige huisjes te veranderen.

2. The management systems in this organization are flexible enough to allow us to respond quickly to changes in our markets
   De MS bij de Rabobank zijn flexibel genoeg om snel te reageren op veranderingen in de markt.

3. The management systems in this organization evolve rapidly in response to shifts in our business priorities
   De MS veranderen snel in respons op de veranderingen van de prioriteiten in de organisatie.

Manager’s exploration activities are captured by asking managers to indicate the degree to which they were active with the following:

To what extent did you, last year, engage in work related activities that can be characterized as follows:

De volgende vragen gaan over het zoeken naar nieuwe kansen
In welke mate ben je het afgelopen jaar actief geweest met:

1. Searching for new possibilities with respect to products/services, processes or markets
   Zoeken naar nieuwe mogelijkheden op het gebied van producten, diensten, processen of nieuwe markten.

2. Evaluating diverse options with respect to products/services, processes or markets
   Evalueren van diverse opties voor nieuwe kansen op het gebied van producten, diensten, processen of nieuwe markten.

3. Focusing on strong renewal of products/services or processes
   Focussen op een verbetering van een product, dienst of process

4. Activities requiring quite some adaptability of you
   Activiteiten die redelijk wat van jouw aanpassingsvermogen vragen.

5. Activities requiring you to learn new skills or knowledge
   Activiteiten waarbij je nieuwe kennis of vaardigheden nodig hebt.
Manager’s exploitation activities are captured by asking managers to indicate the degree to which they were active with the following:

**Managers’ exploitation activities**
To what extent did you, last year, engage in work related activities that can be characterized as follows:

*In welke mate ben je het afgelopen jaar actief geweest met:*

1. Activities of which a lot of experience has been accumulated by yourself
   *Activiteiten waarbij je veel ervaring hebt opgedaan.*

2. Activities which serve existing (internal) customers with existing services/products
   *Activiteiten waarbij je bestaande (interne) klanten met bestaande producten/diensten bedient.*

3. Activities of which it is clear to you how to conduct them
   *Activiteiten waarvan het duidelijk is hoe je ze dient uit te voeren.*

4. Activities primarily focused on achieving short-term goals
   *Activiteiten die primair gericht zijn op het behalen van korte termijn doelstellingen.*

5. Activities which you can properly conduct by using your present knowledge
   *Activiteiten die je goed kan uitvoeren met jouw huidige kennis.*

6. Activities which clearly fit into existing company policy
   *Activiteiten die duidelijk passen binnen het bestaande strategisch kader.*
Managers’ top-down knowledge inflows are captured by asking managers to indicate the 
degree in which they received knowledge from:

To what extent did you, last year, receive or gather knowledge from: 
In welke mate heb je het laatste jaar kennis of informatie ontvangen van:

1. Your direct supervisor  
Jouw direct leidinggevende

2. One more hierarchical level up than your direct supervisor  
De managementlaag boven jouw leidinggevende

3. Two more hierarchical levels up than your direct supervisor  
Twee managementlagen boven jouw leidinggevende.

Managers’ horizontal knowledge inflows are captured by asking managers to indicate the 
degree in which they received knowledge from:

To what extent did you, last year, receive or gather knowledge from: 
In welke mate heb je het laatste jaar kennis of informatie ontvangen van:

1. Peer teams within your own organizational unit  
Collega’s met vergelijkbare functiezwarte binnen het directoraat waar je in werkt

2. Peer teams in other organizational units within your own division  
Collega’s met vergelijkbare functiezwarte binnen Rabobank Tilburg.

3. Peer teams in other divisions  
Collega’s met vergelijkbare functiezwarte van andere lokale Rabobanken.

Managers’ bottom-up knowledge inflows are captured by asking managers to indicate the 
degree in which they received knowledge from:

To what extent did you, last year, receive or gather knowledge from: 
In welke mate heb je het laatste jaar kennis of informatie ontvangen van:

1. Your direct assistants  
Medewerker waar je direct leiding aan geeft.

2. One more hierarchical level down than your direct assistants  
Medewerker waar je indirect leiding aan geeft.
To capture performance management context, we asked line management and nonmanagement respondents to indicate the extent to which systems encouraged people at their level.

De volgende vragen gaan over performance management. In hoeverre zorgt het performance management van de Rabobank voor:

1. to set challenging/aggressive goals
   *Dat er ambitieuze doelstellingen worden gesteld.*

2. issue creative challenges to their people, instead of narrowly defining tasks
   *Voor creatieve uitdaging in plaats van nauw gespecificeerde taken.*

3. be more focused on getting their job done well than on getting promoted
   *Voor meer focus om het werk goed gedaan te krijgen dan op promotie maken.*

4. make a point of stretching their people
   *Dat mensen meer doen dan het noodzakelijke in hun werk*

5. reward or punish based on rigorous measurement of business performance against goals
   *Beloning of straf op basis van daadwerkelijk gemeten resultaat*

6. hold people accountable for their performance
   *Dat iedereen verantwoordelijk is voor zijn eigen resultaat.*

7. use their appraisal feedback to improve their performance
   *Dat *de feedback tijdens de beoordeling gebruikt wordt om het resultaat te verbeteren*
To capture social context, we asked line management and nonmanagement respondents to indicate the extent to which systems encouraged people at their level to:

In welke mate zorgen de Management systemen er voor:

1. devote considerable effort to developing their subordinates
   Dat er inspanning wordt geleverd om medewerkers te ontwikkelen.

2. give everyone sufficient authority to do their jobs well
   Dat iedere medewerker voldoende bevoegdheden heeft om zijn werk goed uit te kunnen voeren.

3. push decisions down to the lowest appropriate level
   Dat beslissingsbevoegdheid zo laag mogelijk in de organisatie is belegd.

4. give ready access to information that others need
   Dat de benodigde informatie(voor het uitvoeren van je werk) direct beschikbaar is.

5. work hard to develop the capabilities needed to execute our overall strategy/vision
   Dat er wordt gewerkt om de competenties te ontwikkelen die nodig zijn om de visie van RTeo uit te voeren.

6. base decisions on facts and analysis, not politics
   Dat beslissingen gebaseerd zijn op feiten en niet op politiek.

7. treat failure (in a good effort) as a learning opportunity, not something to be ashamed of
   Dat fouten worden beschouwd als leermogelijkheid en niet als iets om je voor te schamen.

8. are willing and able to take prudent risks
   Dat het mogelijk is om afgewogen risico’s te nemen als medewerker.

9. set realistic goals
   Dat er realistische doelen worden gesteld binnen de organisatie.
Appendix II

### Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Alignment</td>
<td>.167</td>
<td>23</td>
</tr>
<tr>
<td>Adaptability</td>
<td>.143</td>
<td>23</td>
</tr>
</tbody>
</table>

<sup>a</sup> Lilliefors Significance Correction

* This is a lower bound of the true significance.

### Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>SocialContext</td>
<td>Non-management</td>
<td>.070</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>.136</td>
</tr>
<tr>
<td>Performancecontext</td>
<td>Non-management</td>
<td>.095</td>
</tr>
</tbody>
</table>

<sup>a</sup> Lilliefors Significance Correction

* This is a lower bound of the true significance.
### Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Exploration</td>
<td>.135</td>
<td>23</td>
</tr>
<tr>
<td>a. Lilliefors Significance Correction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* This is a lower bound of the true significance.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Exploitation</td>
<td>.182</td>
<td>23</td>
</tr>
<tr>
<td>a. Lilliefors Significance Correction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>topknow</td>
<td>.188</td>
<td>7</td>
</tr>
<tr>
<td>a. Lilliefors Significance Correction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* This is a lower bound of the true significance.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>horknow</td>
<td>.228</td>
<td>22</td>
</tr>
<tr>
<td>a. Lilliefors Significance Correction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>botknow</td>
<td>.173</td>
<td>19</td>
</tr>
<tr>
<td>a. Lilliefors Significance Correction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix III

Mann-Whitney Test for social context variable.

<table>
<thead>
<tr>
<th>Functie</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SocialContext</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-management</td>
<td>159</td>
<td>87,20</td>
<td>13864,50</td>
</tr>
<tr>
<td>Management</td>
<td>22</td>
<td>118,48</td>
<td>2606,50</td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test Statistics

<table>
<thead>
<tr>
<th>SocialContext</th>
<th>Mann-Whitney U</th>
<th>Wilcoxon W</th>
<th>Z</th>
<th>Asymp. Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-management</td>
<td>1144,500</td>
<td>13864,500</td>
<td>-2,631</td>
<td>.009</td>
</tr>
</tbody>
</table>

a. Grouping Variable: Functie

Independent Samples Test for performance management context variable

<table>
<thead>
<tr>
<th>Equal variances assumed</th>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>Sig.</td>
<td>t</td>
</tr>
<tr>
<td>Performance context</td>
<td>.047</td>
<td>.830</td>
<td>.890</td>
</tr>
<tr>
<td>not assumed</td>
<td>.813</td>
<td>.24357</td>
<td>.424</td>
</tr>
</tbody>
</table>


## Appendix IV

Tests for hypothesis 1

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>5,192</td>
<td>2,158</td>
<td>2,406</td>
</tr>
<tr>
<td></td>
<td>OrgContext</td>
<td>.121</td>
<td>.157</td>
<td>.166</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>4,267</td>
<td>2,052</td>
<td>2,079</td>
</tr>
<tr>
<td></td>
<td>OrgContext</td>
<td>.152</td>
<td>.147</td>
<td>.208</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>2,375</td>
<td>1,138</td>
<td>.419</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>1,481</td>
<td>2,432</td>
<td>.609</td>
</tr>
<tr>
<td></td>
<td>OrgContext</td>
<td>.200</td>
<td>.141</td>
<td>.274</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>4,545</td>
<td>1,572</td>
<td>.802</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>2,560</td>
<td>1,356</td>
<td>.522</td>
</tr>
</tbody>
</table>

* Dependent Variable: Ambidexterity1
## Appendix V

Test for hypothesis 2

### Coefficients<sup>a</sup>

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2,249</td>
<td>.634</td>
<td>3,551</td>
</tr>
<tr>
<td></td>
<td>topknow</td>
<td>.452</td>
<td>.176</td>
<td>.488</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>2,172</td>
<td>.633</td>
<td>3,430</td>
</tr>
<tr>
<td></td>
<td>topknow</td>
<td>.461</td>
<td>.175</td>
<td>.499</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>.198</td>
<td>.176</td>
<td>.214</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>2,546</td>
<td>.632</td>
<td>4,029</td>
</tr>
<tr>
<td></td>
<td>topknow</td>
<td>.446</td>
<td>.166</td>
<td>.482</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>-.121</td>
<td>.240</td>
<td>-.131</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>-.383</td>
<td>.208</td>
<td>-.476</td>
</tr>
</tbody>
</table>

<sup>a</sup> Dependent Variable: Exploitation
Appendix VI

Test for hypothesis 3

<table>
<thead>
<tr>
<th>Model</th>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>2,329</td>
<td>,551</td>
<td>4,226</td>
<td>,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>horknow</td>
<td>.274</td>
<td>,125</td>
<td>,444</td>
<td>2,198</td>
<td>,040</td>
</tr>
<tr>
<td></td>
<td>botknow</td>
<td>.149</td>
<td>,150</td>
<td>,200</td>
<td>,991</td>
<td>,334</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>2,021</td>
<td>,573</td>
<td>3,529</td>
<td>,002</td>
<td></td>
</tr>
<tr>
<td></td>
<td>horknow</td>
<td>.295</td>
<td>,122</td>
<td>,479</td>
<td>2,427</td>
<td>,025</td>
</tr>
<tr>
<td></td>
<td>botknow</td>
<td>.238</td>
<td>,157</td>
<td>,320</td>
<td>1,511</td>
<td>,147</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>-.405</td>
<td>,270</td>
<td>-,304</td>
<td>-1,502</td>
<td>,150</td>
</tr>
<tr>
<td>3</td>
<td>(Constant)</td>
<td>2,241</td>
<td>,740</td>
<td>3,027</td>
<td>,007</td>
<td></td>
</tr>
<tr>
<td></td>
<td>horknow</td>
<td>.306</td>
<td>,126</td>
<td>,496</td>
<td>2,425</td>
<td>,026</td>
</tr>
<tr>
<td></td>
<td>botknow</td>
<td>.204</td>
<td>,175</td>
<td>,275</td>
<td>1,169</td>
<td>,258</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>-.520</td>
<td>,364</td>
<td>-,390</td>
<td>-1,430</td>
<td>,170</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>-.162</td>
<td>,335</td>
<td>-,140</td>
<td>-0,484</td>
<td>,634</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Exploration
Appendix VII

Test for hypothesis 4

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>3.673</td>
<td>4.641</td>
<td>.791</td>
</tr>
<tr>
<td></td>
<td>Knowflow</td>
<td>.045</td>
<td>.026</td>
</tr>
<tr>
<td></td>
<td>Performancecontext</td>
<td>.717</td>
<td>.827</td>
</tr>
<tr>
<td></td>
<td>SocialContext</td>
<td>-.316</td>
<td>1.072</td>
</tr>
<tr>
<td>2 (Constant)</td>
<td>3.907</td>
<td>4.513</td>
<td>.866</td>
</tr>
<tr>
<td></td>
<td>Knowflow</td>
<td>.027</td>
<td>.028</td>
</tr>
<tr>
<td></td>
<td>Performancecontext</td>
<td>.986</td>
<td>.824</td>
</tr>
<tr>
<td></td>
<td>SocialContext</td>
<td>-.505</td>
<td>1.050</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>1.790</td>
<td>1.230</td>
</tr>
<tr>
<td>3 (Constant)</td>
<td>.106</td>
<td>4.452</td>
<td>.024</td>
</tr>
<tr>
<td></td>
<td>Knowflow</td>
<td>.032</td>
<td>.025</td>
</tr>
<tr>
<td></td>
<td>Performancecontext</td>
<td>1.173</td>
<td>.754</td>
</tr>
<tr>
<td></td>
<td>SocialContext</td>
<td>-.350</td>
<td>.957</td>
</tr>
<tr>
<td></td>
<td>MissingValue</td>
<td>4.041</td>
<td>1.518</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>2.798</td>
<td>1.277</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Ambidexterity1