

## **MICROFOUNDATIONS OF ABSORPTIVE CAPACITY: A THEORETICAL DISCUSSION ABOUT THE THEME**

Recebido em 13/12/2019. Aprovado em 02/02/2020.  
Avaliado pelo sistema *double blind peer review*.

**Alessandra Yula Tutida<sup>1</sup>**  
**Cleide Tirana Nunes Possamai<sup>2</sup>**  
**Ricardo Luis Barcelos<sup>3</sup>**  
**Carlos Ricardo Rossetto<sup>4</sup>**

### **ABSTRACT**

The manner in which the absorption of external knowledge occurs in organizations and how this phenomenon is treated in order to be converted into competitive advantage in the market, leads us to the involvement of individuals, processes and structures. Consequently, leading us to the study of absorptive capacity through micro foundations. Organizations fail to take advantage of external knowledge, not taking into consideration that individuals need to be motivated to be able to absorb and convert knowledge into actions. This paper features an analysis of the literature on the construct of micro foundations of absorptive capacity, embracing three dimensions: individuals, processes and structure. With the aid of a bibliographical review of the construct, it was possible to argue that the study of micro foundations aims to understand the behavioral characteristics of organizations and as a result, influence their performance. The results point the need to better understand individuals, their choices and abilities. For future research, it is suggested to verify how the influence of past performance contributes to the execution of future organizational routines.

**Keywords:** Absorptive Capacity. Micro foundations. Individuals. Processes. Structure.

## **MICROFUNDAMENTOS DA CAPACIDADE ABSORPTIVA: UMA DISCUSSÃO TEÓRICA SOBRE O TEMA**

### **RESUMO**

A maneira que a absorção de conhecimento externo ocorre pelas organizações e a forma com que tratam este fenômeno para converter em vantagens competitivas no mercado em que atuam, nos remete para o envolvimento de pessoas, processos e estruturas, conseqüentemente para o estudo da capacidade absorptiva por meio dos microfundaamentos. Muitas empresas falham em conseguir aproveitar o conhecimento externo, dependendo das pessoas que compõem a organização, já que os indivíduos dependem de motivação para aproveitar e converter estes conhecimentos em ações. O presente artigo apresenta uma análise a respeito do conceito dos microfundaamentos da capacidade absorptiva, envolvendo suas três dimensões. Por meio de uma revisão bibliográfica do tema, foi possível evidenciar que o estudo dos microfundaamentos compreende as características comportamentais das empresas e conseqüentemente influência no seu desempenho. As conclusões remetem para a necessidade de compreender os indivíduos, suas escolhas e suas habilidades. Como pesquisas futuras,

<sup>1</sup> Doutoranda em Administração pela Universidade do Vale do Itajaí (PPGA/UNIVALI). Professora. E-mail: sachatutida@hotmail.com

<sup>2</sup> Doutoranda em Administração pela Universidade do Vale do Itajaí (PPGA/UNIVALI). Coordenadora e Professora do Centro Universitário Leonardo da Vinci UNIASSELVI. E-mail: cleidenunespossamai@gmail.com

<sup>3</sup> Doutorando em Administração pela Universidade do Vale do Itajaí (PPGA/UNIVALI). Professor de graduação e pós-graduação das Faculdades SENAC-SC e UNISUL. E-mail: ricardo.barcelos73@gmail.com

<sup>4</sup> Doutor em Engenharia de Produção pela Universidade Federal de Santa Catarina (UFSC). Professor do Programa de Pós-Graduação em Administração da Universidade do Vale do Itajaí (PPGA/UNIVALI). E-mail: rossetto@univali.br

sugere-se verificar de que forma a influência dos desempenhos passados contribuem para a execução de rotinas organizacionais futuras.

**Palavras chave:** Capacidade Absortiva. Microfundamentos. Indivíduos. Processos. Estrutura.

## 1 INTRODUCTION

The main objective of micro foundations is the study of absorptive capacity in organizations, in their absorption of external knowledge, which modifies according to the abilities and competences of each individual (Cohen & Levinthal, 1989; Cohen & Levinthal, 1990; Zahra & George, 2002). Consequently, the uncertainty behavior in today's global market requires that organizations understand the heterogeneous judgments and perceptions of the actors, which lead their importance to macro factors. Therefore, the research on micro foundations focus on the influence of individual actions and interactions on the firm's heterogeneity (Foss & Foss, 2005; Abell et al., 2008; Foss, 2010; Foss, 2011; Felin & Foss, 2012) with the purpose to mention the organizational strategy through micro foundations.

The behavior uncertainty in today's global markets demands that we understand the heterogeneous judgments and perceptions of the actors that lead to macro factors and their importance. The micro foundations program is capable of specifying macro and micro relationships, although it also recognizes that individuals and organizations have choices that create and outline the macro environment. In terms of collectivity, individuals behave and react to the stimulus that surround them, whether stimulated by the organization or by the environment. Individual involvement is essential to ensure the absorption of new external knowledge. Hence, it is important to study micro-foundations at the micro-organizational level, so that the phenomenon can be better understood with individuals and processes.

Collaborating with this important topic, this article analyzes the routines of micro-foundations, through its three dimensions: individual, process and structure, which make up the absorptive capacity of an organization (Lewin et al., 2011). Felin and Foss (2012) commented that there is a need to study this phenomenon in more detail, noting that empirical work on routines and capabilities suggests that the area is mature for unified exploration of micro-foundations and with a view to succeed with the absorption of knowledge, individuals must be motivated and able to assess the technological feasibility suggested by organizations, which is not an easy task to complete.

In this sense, this work offers contributions on the topic. First, the literature on micro-foundations of absorptive capacity is reviewed, describing in detail its dimensions, individuals, processes and structures, thus allowing the application to contexts related to innovation (Lane et al. 2006; Volberda, Foss, & Lyles, 2010). Second, micro foundations are discussed in order to provide a deeper understanding of the interactions between individuals, processes and structures at the organizational level, illuminating the practice of absorption capacity. Third, it proposes studies for future research in the context of micro foundations of ACAP.

With respect to the empirical contribution, this work illustrates the importance of micro-foundations in the practical coordination of ACAP. Even though it does not completely elucidate the functioning of ACAP, this work allows managers to identify basic concepts about the management of individuals, processes and structures of the organization that allow a coordinated functioning of these elements, stimulating the acquisition, assimilation, transformation and application of new knowledge to improve organization's performance.

Concerning social contribution, this work can provide an improvement in organizational performance within the scope on dimensions of sustainability: economic, environmental and social, supporting the achievement of this work. Cooper & Molla (2016) and Garay, Font, & Pereira-Moliner (2017) argue that absorption capacity facilitates the

adoption of successful sustainable strategies. In addition, absorption capacity can explain performance results, acting as a mechanism to assist companies to achieve innovation and subsequent financial benefits.

This study begins with the theoretical basis and then presents the discussion of absorptive capacity, exposing its evolution. Moving on to the study of micro foundations, bringing information about the three dimensions: individual, process and structure. Then, it presents the methodological procedures, the analysis results, indicating possible research gaps, and, finally, the study conclusions.

## 2 LITERATURE REVIEW

### 2.1 Absorptive Capacity

Absorptive Capacity (ACAP) is an important antecedent to the performance of innovation (Cohen & Levinthal, 1990; Zahra & George, 2002). Absorptive Capacity is the ability of a company to recognize the value of new external knowledge, to assimilate, transform and exploit it to produce an organizational capacity (Zahra & George, 2002). Despite the popularity of the construct and its wide use in academic contributions, the underlying mechanisms of ACAP are still ambiguous (Lane et al., 2006; Volberda et al., 2010).

The role of individuals in relation to the company's ACAP has hardly been addressed in the current literature. However, Cohen & Levinthal (1990) have already stated in their seminal work that "the ability of an organization to absorb knowledge will depend on the absorptive capacity of their individual members." Although the ACAP literature has highlighted the importance of its antecedents at the individual level, such as prior knowledge and experience (Cohen & Levinthal, 1990; Hayton & Zahra, 2005; Lane et al., 2006; Lenox & King, 2004; Zhao & Anand, 2009) cognitive models (Cohen & Levinthal, 1990; Zahra & George, 2002) and social networks (Todorova & Durisin, 2007), the effects of these antecedents have rarely been examined empirically.

Individual involvement is essential to ensure the absorption of new external knowledge. To succeed with the absorption of knowledge, individuals must be motivated and be able to assess technological practicability. Absorption capacity processes are challenging and often end up stagnated at the end of the efforts of introducing absorption. Individual knowledge workers who actively contribute to the absorption of environmental knowledge are critical to making their organizations innovative (Cohen & Levinthal, 1990; Enkel et al., 2017; Ter Wall et al., 2017).

When specific antecedents and results of individual ACAP efforts were discovered (Minbaeva, 2008; Foss et al., 2009; Ter Wall et al., 2017; Yao & Chang, 2017; Enkel et al., 2017), the way each individual engage in the absorption of new knowledge during the ACAP phases was neglected. Recent research has called for the adoption of a micro-based approach to discover the actions and agency of individuals in ACAP (Hart et al., 2016; Martinkenaite & Breunig, 2015; Schweisfurth & Raasch, 2018; Distel, 2018).

### 2.2 A better understanding of microfoundations

Micro foundations are individual and organizational factors that determine the creation of organization-level routines and capabilities (Foss & Foss, 2005; Felin & Foss, 2012). The stream of micro foundations in strategic management has recently originated from criticisms of the assumptions underlying dynamic and knowledge-based capacity theories. In these theories, capabilities and routines are considered fundamental units of analysis at the

organizational level that can explain the differences between the performance of companies (Kogut & Zander 1992; Teece et al., 1997).

In turn, most research studied antecedents and results at the organizational level, thus assuming homogeneity at lower levels of analysis (Felin & Hesterly, 2007). This assumption of homogeneity considers individuals malleable with a random distribution of individual characteristics within organizations (Spender, 1996). However, some scholars questioned this assumption about individual homogeneity and argued that individuals are the locus of knowledge creation and that the heterogeneity of individual factors better explains the firm's performance than organizational factors (Felin & Hesterly, 2007).

This has resulted in a focus on the micro-bases in the knowledge-based dynamic capacity literature, which has been defined as the actions and interactions of individuals that determine the creation of routines and capabilities at the organizational level (Foss & Foss, 2005; Abell et al., 2008). The micro foundation perspective is appropriate to study ACAP for two reasons. First, it is assumed that ACAP is grounded in prior knowledge and cognitions of individuals, as Cohen & Levinthal (1990: 131) have stated: "The ability of an organization to absorb knowledge will depend on the absorptive capacities of the individual members". Second, these individual members in connection with the organization and its environment determine which knowledge is identified as valuable and is subsequently acquired (Cohen & Levinthal, 1990).

In fact, the creativity of individuals is important because it determines the extent and ways in which newly acquired knowledge is used to create new products, processes, and services (Lane et al., 2006; Zahra & George, 2002)). These indications imply that organizational mechanisms are related to the communication structures of knowledge transfer from the external environment to the organization and the dissemination of that knowledge within the organization. To quote Cohen & Levinthal (1990: 131): "The absorption capacity of a company is not, however, simply the sum of the absorptive capacity of its employees and therefore it is useful to consider which aspects of absorptive capacity are distinctly organizational".

This study answers the call for research on micro foundations of ACAP (Volberda et al., 2010). Through a systematic analysis of the individual ACAP construct, we enable researchers and practitioners to better examine the underlying mechanisms of ACAP. Thus, there are opportunities to study the background and results of the individual ACAP (Todorova & Durisin, 2007), to clarify how ACAP exists at different levels of analysis (individual, group, and organizational) and how they are related (Volberda et al., 2010).

Such multilevel studies could examine in more detail which aspects of ACAP are organizational or individual (Cohen & Levinthal, 1990). The micro foundation perspective is appropriate to study ACAP for two reasons. First, it is assumed that ACAP is grounded in the prior knowledge and cognitions of individuals, as Cohen & Levinthal (1990: 131) have stated: "The ability of an organization to absorb will depend on the absorptive capacities of their individual members".

These individual members in connection with the organization and its environment determine which knowledge is identified as valuable and is subsequently acquired (Cohen & Levinthal, 1990). According to Gupta et al. (2007), researchers should study high level concepts through phenomena that occur at lower levels. The lower level analysis strengthens the structural basis of a concept and thus clarifies its nature (Gupta et al., 2007).

Without a focus at the micro level, the underlying organizational mechanisms cannot be defined. As a result, the relationship between routines and performance remains uncertain. (Abell et al., 2008). With respect to the main areas and topics studied, some papers analyze general issues of micro foundations, with discussions and theoretical considerations. Insights

into what micro-foundations are, why strategy and resource-based theory need them, and what are the methodological grounds for their analysis?

Most of these works focus on capabilities and routines in general. It is possible to follow the researchers who are leading this emerging literature (Foss & Foss, 2005; Abell et al., 2008; Foss, 2010; Foss, 2011; Felin & Foss, 2012) to specify how the fundamentals of strategy Micro foundation research focuses on the influence of individual actions and interactions on firm heterogeneity. In this way, it is important to get a better understanding of what the micro-foundations are and also to know their nuances. Micro foundations are routines that occur inside and outside the organization, which make the composition of absorptive capacities (Lewin et al., 2011).

Certain factors facilitate absorption capacity, followed by the company's superior performance (Zhara & George, 2002). Firms can use specific organizational mechanisms that enhance absorptive capacity and help manage compliance (Jansen & Volberda, 2005). These routine goals are expressed in the form of firm practices (Lewin et al., 2011).

Micro foundations can be defined as fundamentals of something, namely aggregate concepts that can harbor relationships between aggregated variables (Foss, 2010). Micro foundations also called meta-routines, the basis of practiced routines, which together constitute the absorptive capacity of a company (Lewin et al., 2011). One of the justifications on the importance of understanding micro foundations lies in the fundamental mission of strategic management: to enable managers to obtain and sustain competitive advantage. Micro foundations indicate the way to examine individual actions and interactions.

For example, individual characteristics are combined and amplified through group-level and team-level interaction processes (Ployhart & Moliterno, 2011). In addition, the human capital is a company's collective resource, which arises through these processes. While there are strong philosophical reasons for initiating micro-level analysis (Foss & Foss, 2005; Felin & Hesterly, 2007) a micro foundation's project increases the chances of general acceptance and diffusion in research communities if new consequences of aggregate phenomena can be predicted and demonstrated (Stinchcombe, 1991). In fact, there is an increasing number of studies that demonstrate the new aggregate assumption of explicitly microfoundations assumptions in the context of knowledge-based production (Gottschlg & Zollo, 2007; Abell et al., 2008; Linderberg & Foss, 2010).

Therefore, it is important to try to understand in greater depth the behavioral characteristics of the companies and how this should influence their performance before other companies in the same segment / market. There is a need to deepen the conceptual discussion on micro foundations, taking into account three relevant aspects: individuals, processes and structure.

### 2.3 Individuals

The existing set of cognitive and motivational assumptions in management research is inadequate to deal with micro foundations' challenges. To the extent that the understanding of intelligent and adaptive behaviors is a necessary part of micro foundations for the knowledge movement, research may not be best served by behaviorism and its various streams. In behavioral models, agents are programmed to choose certain courses of action, and it is therefore difficult to deal with judgment, discretion, etc. In addition, behaviorism in management has had difficulties in dealing with motivation, and is often seen as a "black box" (Nelson & Winter, 1982).

However, theories that highlight routines and capabilities as the critical unit are practically silent on the intelligent effort and on the motivational requirements of knowledge-based production. What is essential to understand the emergence, change, maintenance, etc. knowledge-based value creation and ownership is a feature of "*individuals first*" that can

address the specific organizational and managerial challenges introduced by knowledge-based production (Foss & Foss, 2005).

As indicated by Foss & Foss (2005), organizations are formed by individuals and without them, they cannot exist. Abell et al. (2008) and Foss (2011) commented that the collective behavior of a system (the firm) is the consequence of actions and interactions of its components (individuals). As researchers do not always want to make explicit reference to complicated underlying patterns of individual actions, they generally prefer to use explanatory abbreviation in the form of collective concepts.

As Foss & Foss (2005) noted, in order to fully explain any strategic topic at the organizational level (capacities, knowledge, learning, identity), it is fundamental to begin to understand the individuals who make the whole as the central agents, specifically their natures, choices, abilities, propensities, heterogeneity, purposes, expectations and motivations. Turner & Fern (2012) highlighted the differences in how actors' experience affects responsiveness to different forms of change in contextual limitations help to broaden our understanding of the micro foundations of routines. The main argument of micro foundations is that individuals are important, and this micro level is necessary for the explanation of collective strategic phenomena.

## 2.4 Processes

As noted by Winter (2012), it is difficult to separate the origin of routines and capabilities without reference to historical and contextual factors that clearly play a role in the operation of routines and in capacity development. Time-dependent processes necessarily inform routines and capabilities in two fundamental ways.

What individuals do and do not do and what challenges they face are resources for which knowledge remains scarce, there is a lack of in-depth account of the individual in the absorptive capacity process (Martinkenaite & Breunig, 2015; Ter Wal et al., 2017). Previous studies of absorptive capacity that focus on how the process unfolds lead to the emphasis of the individual to focus primarily on the results of absorptive capacity (Sun & Anderson, 2010; Hart et al., 2016; Martinkenaite & Breunig, 2016), theorizing micro macro links where the individual is the starting point rather than the focal point. In other words, these studies transfer the unit of analysis to the company level as the absorptive capacity process unfolds.

To simplify, a process is a sequence of interdependent events; this baseline definition is mapped directly to the definition of routines. Putting processes into action requires the intervention of individuals. Thus, interactions between individuals and processes within organizations can provide insight into how capabilities and routines emerge. These origins based on routines and capabilities are strongly evident in existing and emerging empirical work (Pentland & Rueter, 1994; Maritan & Brush, 2003; Heimericks & Duysters, 2007; Salvato, 2009).

Studies in individual ACAP movement provide important information about ACAP processes, but are widely concerned with ACAP as an aggregate phenomenon at the organizational level. Recent research, however, has called for the adoption of a micro foundation's approach by discovering the actions and agency of individuals in absorptive capacity (Hart et al., 2016; Martinkenaite & Breunig, 2015; Distel, 2017; Schweisfurth & Raasch, 2018).

## 2.5 Structure

When one speaks of structure, one can say that it affects the creation or evolution of micro foundations, which are linked to organizational routines. The structure or design of decision-making activities within organizations can affect routines and capabilities. For

example, members of organizations often make choices in the face of organizational and institutional constraints (Ingram & Clay, 2000).

When discussing the dimension of organizational structure and micro foundations, a broad body of work considers how differences in the design of organizational structures can affect routines and capabilities. For example, flat structures allow autonomy and maximize information maintained by members of an organization, but also create problems for effective coordination (Foss, 2003). At the same time, the organization design can generate gaps in shared knowledge in parts of the organization and, in turn, jeopardize coordination and integration (Hoopes & Postrel, 1999).

Micro foundations also focus on knowledge base literature and on dynamic capacity, which has been defined as individual's actions and interactions to determine the creation of routines and capabilities at the organization level (Foss & Foss, 2005; Abell et al., 2008). The relationship of structure and micro foundations may be linked to organizational routines, where structure may or may not facilitate efficient information processing, development, or sharing of knowledge, coordination, and collective processes.

More recently, the concept of micro foundations has been expanded to include not only the actions and interactions of individuals, but also organizational processes and structures. Since organizations allow for greater flexibility in their structure and rule systems, others develop more complex rule structures to manage activities (Felin & Foss, 2012; Hodgson, 2012).

The current flow of micro foundations assumes that organizations differ in performance due to differences in individuals, their social processes and organizational structures (Felin & Foss, 2012). The objective of this emerging trend is to adopt a multilevel perspective on routines and capabilities to explain how they are constructed, maintained, and altered by individuals' behavior and their interaction with organizational mechanisms (Foss, 2011; Felin & Foss, 2012). In this way the effectiveness of these approaches can affect the ways in which routines and capabilities are created or how they can evolve.

A vast content of work takes into consideration how differences in the formation of organizational structures can affect routines and capabilities. It is well recognized that the degree of complexity of an organizational structure or organizational form (high versus flat, matrix, virtual matrix, network form) affects the nature, diffusion of different activities within an organization, such as information processing, sharing knowledge, routine replication, and capacity development.

### 3 METHODOLOGICAL PROCEDURES

In order to have a better understanding of what has been researched in an area of study, it is necessary to know studies that report important advances in science. Through the bibliographic review it is possible to obtain a more detailed overview on specific themes. For Yin (2010), the literature review should be used by researchers who wish to better understand certain topics in order to deepen knowledge and increase the capacity for theoretical discussion in their studies.

The analyzed papers for the theoretical discussion of this article are seminal articles on the themes of absorptive capacity and micro-foundations, including articles of researchers who published their work on the subject in international journals, according to Table 1.

Table 1  
Seminal articles analyzed

Year	Title	Author	Journal	H-Index	Qualis
2007	The Knowledge-Based View, Nested Heterogeneity, and New Value Creation: Philosophical Considerations on the Locus of Knowledge.	Felin, T. ; Hesterly, W. S.	Academy of Management Review	242	
2009	Encouraging knowledge sharing among employees: How job design matters.	Foss, N. J., Minbaeva, D. B., Pedersen, T., & Reinholt, M.	Human Resource Management	81	A1
2010	Open Innovation and the Stage-Gate Process: A Revised Model for New Product Development.	Gronlund, J., Sjödin, D. R., Frishammar, J.	California Management Review	118	
2011	Microfoundations of Internal and External Absorptive Capacity Routines.	Lewin, A. Y.; Silvia, M.; Carine, P.	Organization Science	211	
2012	Examining the Stability and Variability of Routine Performances: The Effects of Experience and Context Change.	Turner, S.F; J. Fern, M.	Journal of Management Studies	158	A1
2012	Intentions, intermediaries, and interaction: Examining the emergence of routines.	Bapuji, H., Hora, M., & Saeed, A. M.	Journal of Management Studies	158	A1
2012	Perceiving and remembering routine action: Fundamental micro-level origins.	Cohen, M. D.	Journal of Management Studies	158	A1
2013	Knowledge related activities in open innovation: managers' characteristics and practices.	Pedrosa, A. M.; M. Välling; Boyd, B.	International Journal of Technology Management	51	A2
2014	Leveraging external sources of innovation: A review of research on open innovation.	West, J., Bogers M.	Journal of Product Innovation Management	126	
2015	The emergence of absorptive capacity through micro-macro level interactions.	Martinkenaite, I., K. J. Breunig.	Journal of Business Research	158	A1
2017	Unveiling the microfoundations of absorptive capacity: A study of Coleman's bathtub model.	Distel, A. P.	Journal of Management	192	
2018	How individuals engage in the absorption of new external knowledge: A process model of absorptive capacity.	Sjodin, D., Frishammar, J., Thorgren, S.	Journal of Product Innovation Management	126	

Source: Authors (2019).

Lakatos & Marconi (2010) also stressed the importance of carrying out a bibliographic survey in order to obtain a better understanding of the current state of knowledge about a topic and also when discussing what research gaps can still be explored by researchers.

#### 4 PRESENTATION AND ANALYSIS OF RESULTS

It is observed that the concept of micro foundations has developed over the years, and has absorbed the eyes of researchers who presented different visions over the years. Felin & Foss, (2012) pointed to the fact that there are three main categories of micro-organizational components, being routines, individuals and processes. Notably, a strong motivation for unpacking routines and capabilities in micro foundational terms has emerged in the hope of understanding what generates differences in behavior and performance. In addition, studying the emergence of routines can generate differentiated insights about organizations (Felin & Foss, 2011; Witt, 2011; Pentland et al., 2012).

A little more than 10 years after the work of Abell, Felin & Foss (2008) it is acceptable to say that it is possible to have a better notion of how the relation between routines and performance occurs, at that time still being discussed as something uncertain in



the academy. Turner & Fern (2012) argued that the theory of routines has emphasized the idea that experience in performing routines is a key source of stability and variability for organizations. They further emphasized that experience in performing a routine provides actors with a greater understanding of the routine and context, which in turn provides a general stabilizing effect on routine performance, but experience also increases the actors' ability to adjust performance in response to changes in contextual limitations.

Azarin (2014) commented that the research of micro foundations focuses on the influence of individual actions and interactions on the heterogeneity of the company. These interactions must be investigated in order to have a theoretical construction on the theme. The author states that a reason that might explain the lack of micro-foundations in strategy may be based on an implicit agreement that such discussions are best left at the level of the basic disciplines (psychology at the individual level).

Felin et. al (2015) pointed that the micro foundations project so far has been a distinct success. He went beyond his initial preaching tone and made the transition to building a theory. But why did micro foundations take so long to explicitly enter the research agenda of strategy scholars?

Thus, micro foundations seek to better understand behavioral characteristics of companies and how this should influence their performance in relation to other companies in the same segment / market. Sjodin et. al (2018) elucidated that even though research has already been done on the subject, what individuals do and do not do and what challenges they face are characteristics for which knowledge remains scarce.

#### 4.1 Possible GAPS

Some research gaps deserve to be highlighted due to the high importance aspects in the literature on absorptive capacity and micro-foundations. First, an examination of how individuals' psychological processes affect organizational routines and capabilities is important for a questioning of micro-foundations because the need for absorptive capacity seems especially critical given the growing trend towards open innovation processes for which systematic leverage of sources knowledge is key (Gronlund et al., 2010; Pedrosa et al., 2013; West & Bogers, 2014).

Future studies could devote more attention to individual heterogeneity and its effects on the absorption of knowledge (Felin & Hesterly, 2007; Foss et al., 2009). The authors further reinforce the need for future research in an investigation of individual competencies. For example, it may be helpful to study the key traits or abilities of individuals and how they are important in all phases of absorptive capacity.

Future research should devote more attention to examining factors that change the balance between stability and variability. Another suggestion would be to consider how the past performances of the actors in a routine shape certain element of the surrounding context, which in turn influence the way actors perform the routine in the future.

Despite all the research done so far, there is still a call for capacity-building scholars to pay more attention to their hypotheses and to develop theoretical arguments that take micro-foundations into account. Little attention has been given to the underlying structure in absorptive capacity, which integrates the characteristics of routines (tacit, informal, firm-specific and idiosyncratic) and further elaborates the absorptive capacity construct (Lewin et al., 2011).

Turner & Fern (2012) reinforced 03 research possibilities that need more attention: factors that change the balance between stability and variability; understand how the past performances of the actors in a routine shape certain elements of the surrounding context, which in turn influence the way actors perform the routine in the future; and also a better

examination of the interrelationship between experience and context, and its relation to the results of the task.

Bapuji et al (2012) also followed this same line of thought when affirming that further research on routines and the role of individuals, artifacts and their interaction in organizations is still needed. Cohen (2012) says that while challenging, a deeper understanding of how organizational routine emerges from individual habit will be extremely helpful to key lines of research in organizations and strategy, such as the role of artifacts in coordinating and developing routines in some highly adaptable work teams, while others resist the necessary change.

Further investigation of individual differences is particularly important as long as they play a key role in aggregating individual actions into organizational-level outcomes. Absorptive Capacity's individual-level determinants can also be linked to organizational-level factors through multilevel research (Martinkenaite & Breunig, 2015).

Distel (2017) emphasizes that future research should prove causal relationships and completely highlight possible endogeneity problems by employing appropriate instrument variables, a longitudinal design and / or (almost) experimentation. Sjodin et al. (2018) reinforced the need to research what individuals do and do not do and what challenges they face, since they are characteristics for which knowledge is still scarce.

## 5 CONCLUSIONS

In this article, it was possible to present a more in-depth discussion about what the micro foundations are, and their three dimensions (individual, process and structure), and understand that these dimensions are presented in different interactions within an organization (individuals and individuals, individuals and processes, individuals and structure). Variations in these dimensions (individual, process and structure) can influence the routines and capacities that arise from the members of the organization and their interactions.

From this perspective, individuals in organizations represent the micro foundations of routines and capabilities in various ways. Individual-level components, such as choices and agency, characteristics, skills or cognition, are one of many components to understanding collective phenomena such as routines and capabilities. The main argument of micro-foundations is that individuals are important, and this micro level is necessary for the explanation of collective strategic phenomena.

With respect to the main areas and topics studied, some papers analyze general questions of micro foundations, with discussions and theoretical considerations. Insights into what micro foundations are, why strategy and resource-based theory need them, and what are the methodological grounds that justify their analysis. Most of these works focus on capabilities and routines in general.

One must fundamentally start to begin and understand the individuals who make up the whole, specifically their underlying nature, choices, abilities, propensities, heterogeneity, purposes, expectations and motivations. Practically to be able to explain something about any organizational matter, be it identity, learning, knowledge or skills, one must begin to understand the individuals who make up the whole, especially their nature, choices, and abilities.

## ACKNOWLEDGEMENT

“This work was carried out with the support of the Coordination for the Improvement of Higher Education Personnel - Brazil (CAPES), through the Support Program for Graduate Studies in Community Education Institutions (PROSUC), according to CAPES Ordinance no. 149/2017”.

“Thanks to FAPESC, for the financial support for the infrastructure of the Process Formation of Strategies Group (PROFORME) – UNIVALI”.

“This work was carried out with the support of the National Council for Scientific and Technological Development - Brazil (CNPq), through the Call MCTIC / CNPq Nº 28/2018 - Universal - Process 442090 / 2018-8”.

## TRANSLATION

This article was translated by an American professional who holds a Bachelor’s Degree in Modern Languages, a Master’s Degree in Leadership and Management and years of experience as a translator and interpreter in Latin America and the U.S.A.

## REFERENCES

- Abell, P., Felin, T., & Foss, N. (2008). Building micro-foundations for the routines, capabilities, and performance links. *Managerial and Decision Economics*, 29(6), 489-502.
- Molina-Azorín, J. F. (2014). Microfoundations of strategic management: Toward micro–macro research in the resource-based theory. *BRQ Business Research Quarterly*, 17(2), 102-114.
- Bapuji, H., Hora, M., & Saeed, A. M. (2012). Intentions, intermediaries, and interaction: Examining the emergence of routines. *Journal of Management Studies*, 49(8), 1586-1607.
- Cohen, W. M., & Levinthal, D. A. (1989). Innovation and learning: The two faces of R & D. *The Economic Journal*, 99(397), 569-596.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 128-152.
- Cohen, M. D. (2012). Perceiving and remembering routine action: Fundamental micro-level origins. *Journal of Management Studies*, 49(8), 1383-1388.
- Cooper, V., & Molla, A. (2016). Information systems absorptive capacity for environmentally driven IS-enabled transformation. *Information Systems Journal*, 27(4), 379–425. <https://doi.org/10.1111/isj.12109>
- Distel, A. P. (2017). Unveiling the microfoundations of absorptive capacity: A study of Coleman’s bathtub model. *Journal of Management*, 45(5), 2014-2044.
- Enkel, E., Heil, S., Hengstler, M., & Wirth, H. (2017). Exploratory and exploitative innovation: To what extent do the dimensions of individual level absorptive capacity contribute? *Technovation*, 60, 29-38.
- Felin, T. ; Hesterly, W. S. (2007). The knowledge-based view, nested heterogeneity, and new value creation: Philosophical considerations on the locus of knowledge. *The Academy of Management Review*, 32, 195-218.
- Felin, T., Foss, N. J. (2005). Strategic organization: A field in search of micro-foundations. *Strategic Organization*, 3(4): 441-455.

- Felin, T., Foss, N. (2011). The endogenous origins of experience, routines, and organizational capabilities: the poverty of stimulus. *Journal of Institutional Economics*, 7, 231-256.
- Felin, T., Foss, N. (2012). The (proper) microfoundations of routines and capabilities: a response to Winter, Pentland, Hodgson and Knudsen. *Journal of Institutional Economics*, 8, 271-288.
- Felin, T., Foss, N. J., & Ployhart, R. E. (2015). The microfoundations movement in strategy and organization theory. *The Academy of Management Annals*, 9(1), 575-632.
- Foss, N. J. (2003). Selective intervention and internal hybrids: interpreting and learning from the rise and decline of oticon spaghtetti organization. *Organization Science*, 14, 331-449.
- Foss, K., Foss, N. J. (2005). Value and transaction costs: How property rights economics furthers the resource-based view. *Strategic Management Journal*, 26, 541-556.
- Foss, N. J., Minbaeva, D. B., Pedersen, T., & Reinholt, M. (2009). Encouraging knowledge sharing among employees: How job design matters. *Human Resource Management*, 48(6), 871-893.
- Foss, N. (2010). Micro-foundations for management research: what, why, and whither? *Cuadernos de Economía y Dirección de la Empresa*, 42, 11-34.
- Foss, N. (2011). Why micro-foundations for resource-based theory are needed and what they may look like. *Journal Management*, 37, 1413-1428.
- Garay, L., Font, X., & Pereira-Moliner, J. (2017). Understanding sustainability behaviour: The relationship between information acquisition, proactivity and performance. *Tourism Management*, 60, 418-429. <https://doi.org/10.1016/j.tourman.2016.12.017>
- Gottschal, O.; Zollo, M. (2007). Interest alignment and competitive advantage. *Academy of Management Review*, 32, 418-437.
- Gronlund, J., Sjödin, D. R., Frishammar, J. (2010). Open innovation and the stage-gate process: a revised model for new product development. *California Management Review*, 52(3), 106-131.
- Gupta, A., Tesluk, P., Susan T. M. (2007). Innovation at and across multiple levels of analysis. *Organization Science*, 18, 885-897.
- Hart, T. A., J.B. Gilstrap, Bolino, M.C. (2016). Organizational citizenship behavior and the enhancement of absorptive capacity. *Journal of Business Research*, 69(10), 3981-3988.
- Hayton, J. C., Zahra, S. A. (2005). Venture team human capital and absorptive capacity in high technology new ventures. *International Journal of Technology Management*, 31(3-4), 256-274.
- Heimericks, K. H.; Duysters, G. (2007). Alliance capability as mediator between experience and alliance performance: an empirical investigation into the alliance capability development

process. *Journal of Management Studies*, 44, 25–49.

Hodgson, G. M. (2012). The mirage of microfoundations. *Journal of Management Studies*, 49(8), 1389–1394.

Hoopes, D. G.; Postrel, S. (1999). Shared knowledge, “glitches”, and product development performance. *Strategic Management Journal*, 20, 837–65.

Ingram, P.; Clay, K. (2000). The choice-within-constraints new institutionalism and implications for sociology. *Annual Review of Sociology*, 26, 525–46.

Kogut, B., Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science*, 3(3), 383-397.

Lane, P. J.; Koka, B. R.; Pathak, S. (2006). The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), 833-863.

Lakatos, E. M.; Marconi, M. A. (2010). *Fundamentos da metodologia científica* (7a ed.) São Paulo: Atlas.

Lenox, M.; King, A. (2004). Prospects for developing absorptive capacity through internal information provision. *Strategic Management Journal*, 25(4), 331-345.

Lewin, A. Y.; Silvia, M.; Carine, P. (2011). Microfoundations of internal and external absorptive capacity routines. *Organization Science* 22(1), 81–98.

Lindenberg, S.; Foss, N. J. (2010). Micro-foundations for joint production and sustained value creation: A goal-framing theory of the firm. *Academy of Management Executive*, 27 (2), 85-102.

Maritan, C. A.; Brush, T. H. (2003). Heterogeneity and transferring practices: implementing flow manufacturing in multiple plants. *Strategic Management Journal*, 24, 945–959.

Martinkenaite, I., K. J. Breunig. (2015). The emergence of absorptive capacity through micro-macro level interactions. *Journal of Business Research*, 69(2), 700-708.

Minbaeva, D. B. (2008). HRM practices affecting extrinsic and intrinsic motivation of knowledge receivers and their effect on intra-MNC knowledge transfer. *International Business Review*, 17(6), 703-713.

Nelson, R. R.; Winter, S. G. (1982). *The evolutionary theory of the firm*. Cambridge: Harvard University Press.

Pedrosa, A. M.; M. Välling; Boyd, B. (2013). Knowledge related activities in open innovation: managers’ characteristics and practices. *International Journal of Technology Management*, 61(3/4), 254-273.

Pentland, B. T.; Rueter, H. H. (1994). Organizational routines as grammars of action. *Administrative Science Quarterly*, 39, 484–510.

- Pentland, B. T., Feldman, M. S., Becker, M. C.; Liu, P. (2012). Dynamics of organizational routines: a generative model. *Journal of Management Studies*, 49, 1484–508.
- Ployhardt, R., Moliterno, T. (2011). Emergence of the human capital resource: a multilevel model. *Academy Management Review*, 36, 127-150.
- Salvato, C. (2009). Capabilities unveiled: the role of ordinary activities in the evolution of product development processes. *Organization Science*, 20, 384-409.
- Sjodin, D., Frishammar, J., Thorgren, S. (2018). How individuals engage in the absorption of new external knowledge: A process model of absorptive capacity. *Journal of Product Innovation Management*, 36 (3), 356-380.
- Schweisfurth, T. G., Raasch C. (2018). Absorptive capacity for need knowledge: Antecedents and effects for employee innovativeness. *Research Policy*, 47(4), 687-699.
- Spender, J. C. (1996). Making knowledge the basis of a dynamic theory of the firm. *Strategic Management Journal*, 17, 45-62.
- Stinchcombe, A. (1991). The conditions of fruitfulness of theorizing about mechanisms in social science. *Philosophy of Social Science*, 21, 367-388.
- Sun, P. Y., Marc H. A. (2010). An examination of the relationship between absorptive capacity and organizational learning, and a proposed integration. *International Journal of Management Reviews*, 12(2), 130-150.
- Teece, D. J.; Pisano, G.; Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Ter Wal, A. L., Criscuolo P., Salter A. (2017). Making a marriage of materials: The role of gatekeepers and shepherds in the absorption of external knowledge and innovation performance. *Research Policy*, 46(5), 1039-1054.
- Todorova, G.; Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy of Management Review*, 32(3), 774-786.
- Turner, S. F.; J. Fern, M. (2012). Examining the stability and variability of routine performances: The effects of experience and context change. *Journal of Management Studies*, 49(8), 1407-1434.
- Volberda, H. W., Foss, N. J., Lyles, M. A. (2010). Perspective-Absorbing the concept of absorptive capacity: How to realize its potential in the organization field. *Organization Science*, 21(4), 931-951.
- West, J., Bogers M. (2014). Leveraging external sources of innovation: A review of research on open innovation. *Journal of Product Innovation Management*, 31(4), 814-831.
- Winter, S. G. (2012). Capabilities: Their origins and ancestry. *Journal of Management Studies*, 49(8), 1402–1406.

Witt, U. (2011). Emergence and functionality of organizational routines: An individualistic approach. *Journal of Institutional Economics*, 7(2), 1-24.

Yao, F. K., Chang S. (2017). Do individual employees' learning goal orientation and civic virtue matter? A micro-foundations perspective on firm absorptive capacity. *Strategic Management Journal*, 38(10), 2041-2060.

Yin, R. K. (2010). *Estudo de caso: planejamento e método* (4a ed.) Porto Alegre: Bookman.

Zahra, S. A.; George, G. (2002). Absorptive capacity: A review, reconceptualization, and extension. *Academy of Management Review*, 27(2), 185-203.

Zhao, Z. J., Anand, J. (2009). A multilevel perspective on knowledge transfer: Evidence from the chinese automotive industry. *Strategic Management Journal*, 30(9): 959-983.