JURGITA GINIŪNIENĖ

THE ROLE OF ENTREPRENEURIAL ORIENTATION IN THE RELATIONSHIP BETWEEN LEARNING BEHAVIOUR AND FIRM PERFORMANCE

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KEY DEFINITIONS

DYNAMIC CAPABILITIES – enterprise's capacity to create, re-organise and integrate resources and competences coming both internally and externally in order to address environments which are constantly changing.

RESOURCE-BASED VIEW – the theory of management which explains how the firm sustains competitive positions within the markets through attracting and managing resources and capabilities of the firm that are "valuable, rare, inimitable and nonsubstitutable" (VRIN).

ORGANIZATIONAL LEARNING – workplace activities that are built on the detection and correction of errors within the routines and processes of the enterprise.

ORGANIZATIONAL LEARNING PROCESS – the process that includes the acquisition of new knowledge, distribution of information across the organization, interpretation, and building firm-specific memory.

LEARNING BEHAVIOUR – individual, collective and organizational activities within the firm that are aimed at the exploitation of the existing knowledge, competences and experience, as well as acquisition and development of new knowledge through experimentation with new approaches and ideas.

ENTREPRENEURIAL ORIENTATION OF ESTABLISHED FIRM – strategic direction of the firm capturing the specifics of methods and practices used by entrepreneurs and styles of decision making.

INNOVATIVENESS – one of the key dimensions of entrepreneurial orientation which might be defined as the aim to pursuit new creative solutions for the development or improvement of new products and services of the firm and procedures within the firm.

RISK-TAKING – one of the key dimensions of entrepreneurial orientation which might be defined as the willingness to dedicate a large portion of resources to the development of ideas outcomes of which are unclear.

PROACTIVENESS – one of the key dimensions of entrepreneurial orientation which reflects the way firms respond to market demands or existing trends.

FIRM PERFORMANCE – the part of organizational effectiveness which covers outcomes associated with finances of the firm and its operational activities.

FINANCIAL PERFORMANCE OF THE FIRM – measurement of the firm's performance which focuses on objective financial information in relation to sales growth, market share, profits, return on investment (ROI), and return on assets (ROA).

COMPETITIVE PERFORMANCE OF THE FIRM – measurement of the firm's success indicators in relation with its major competitors.

INTRODUCTION

Due to the increasing competitive rivalry and turbulent operating environment, managers together with researchers are aiming to find best practices for increasing firm performance and gaining, as well as sustaining, competitive advantage. Dynamic changes in the environment require enterprises to constantly adjust and even transform their activities. Thus, firms have to demonstrate their ability to investigate the environment, to make strategic choices of how to act in accordance to that environment and how to reorganise themselves and take bold actions. All of this comes as the essence of the concept of dynamic capabilities.

Dynamic capabilities are understood as a firm's "ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments" (Teece, Pisano, and Shuen, 1997, p. 516). It emerged within the field of strategic management as the answer to the question how firms may develop and sustain competitive advantage in constantly changing environments (Eisenhardt and Martin, 2000). Dynamic capabilities might be seen as the continuation of resource-based view perspective which pointed out at a more static approach towards developing competitive advantage for the firm through the development of resources that are valuable, rare, inimitable and non-substitutable (Barney, 1986). While the resource-based view focuses more on the resources that the firm possesses, the dynamic capability perspective relies on the firm's ability to change and transform these resources when reacting to the changing environment (Helfat and Peteraf, 2003).

The literature on dynamic capabilities suggests that entrepreneurial behaviour within the firm is an antecedent for dynamic capabilities (Borch, 2004; Wu, 2007; Zahra, Sapienza, and Davidsson, 2006), and the firm's success depends on its ability to identify and exploit opportunities (Teece, 2007). Furthermore, Teece (2012) argues that dynamic capabilities are related to the firm's entrepreneurial side. This relation might be identified through the ability of dynamic capabilities to respond to the continuously changing environment by adopting new ways of doing things, innovating, and learning (Dess, Lumpkin, and Eisner, 2010). Specifically, opportunity identification and the ability to respond to these opportunities through the development of new processes, products, or services is primary consideration of the research of dynamic capabilities (Drnevich and Kriauciunas, 2011). Therefore, entrepreneurial activities within new ventures and established firms have been found to influence the development of dynamic capabilities (Zahra *et al*., 2006). Entrepreneurial activities that are taking place at the established firm's level are defined within research literature as the entrepreneurial orientation of the firm. Entrepreneurial orientation is perceived as the efforts of the established firm to be innovative and proactive while taking bold risks (Covin and Slevin, 1989; Wiklund and Shepherd, 2005). Research on entrepreneurial orientation has been evolving rapidly over the past 30 years, while mainly focusing on the effects of the entrepreneurial orientation on the firm's performance and competitive positions within the market, as well as on investigating the entrepreneurial orientation together with other important aspects of the firm (e.g., its strategy, management, attitudes). However, recent analysis of Martens, Lacerda, Belfort and Freitas (2016) suggests

that some of the themes have received more attention from researchers (e.g., internationalization, business performance, innovation performance, market orientation), while other themes of research emerged only more recently (e.g., learning, strategic orientation).

Learning within the firm, on the other hand, has been found to possess enabling power in terms of entrepreneurial activities within the firm (Carayannis, Popescu, Sipp, and Stewart, 2006). It allows employees to become more independent and more engaged to the external environment (Belousova and Gailly, 2013), and develops the conditions for experimentations and application of new knowledge. From the perspective of the research of dynamic capabilities, learning is crucial for the creation of knowledge-based resources that are of great importance for dynamic capabilities (Zahra *et al*., 2006). The importance of the role of learning and knowledge has been acknowledged within the concept of dynamic capabilities. Knowledge here is seen as a fundamental resource that helps enterprises to build and sustain competitive advantage (Hung, Yang, McLean, and Kuo, 2010). Moreover, organizational learning as well as dynamic capabilities are concerned with uncertainty and unpredictability (Salvato, Sciascia, and Albert, 2004); both of these concepts are seeking to establish flexible routines within the organization in order to respond effectively to internal and external conditions (Antonacopoulou, Jarvis, Andersen, Elkjaer, and Hoyup, 2005). Researchers acknowledge the important role of organizational learning in creating and deploying dynamic capabilities. As indicated by Krzakiewicz (2013), a special learning mechanism must be used in order to create and preserve dynamic capabilities. The process of learning is found to be one of the most important elements which are underlying dynamic capabilities (Zollo and Winter, 2002; Easterby-Smith and Prieto, 2007; Ali, Peters, and Lettice, 2012; Bamiatzi, Bozos, Cavusgil, and Hult, 2016). Zollo and Winter (2002) argue that dynamic capabilities are actual results of organizational learning through which the organization develops and modifies knowledge assets.

Not only researchers but also practitioners point out the organization's ability to continuously renew knowledge-based resources and learning as one of the key factors of being able to develop and successfully implement competitive strategies. Since the early development of the concept of organizational learning in the 1960s, researchers have proposed and afterwards empirically tested the impact that learning within the firm has on the firm's performance results and competitive advantage (Inkpen and Crossan, 1995; Lei, Slocum, and Pitts, 1999; Jiang and Li, 2008; Santos-Vinjande *et al*., 2012; Jain and Moreno, 2015). However, the results of empirical testing on the relationship between organizational learning and firm's performance remains inconsistent and inconclusive (Goh, Elliott, and Quon, 2012; Zhu, Liu, and Wang, 2019). Therefore, further investigations on how learning within the firm improves outcomes of the firm's performance are needed.

Theoretical analysis points out several **research gaps** associated with the research problem. Firstly, from the perspective of the concept of dynamic capabilities, it emerges that still little is known about the antecedents of dynamic capabilities. Secondly, researchers within the field of organization learning so far have mainly considered direct effects of learning within the firm on its performance results.

Finally, even though organizational learning is a well-established concept in the management theory, the empirical investigations on this concept have been mainly focused on large firms rather than on small and medium enterprises. Furthermore, the entrepreneurial orientation of established firms has not received significant attention yet from the scholars in Lithuania compared to the studies exploring entrepreneurial actions of new ventures and start-ups.

This leads to the **research problem** of how the learning behaviour and entrepreneurial orientation of an established firm contribute to the firm performance results.

The **aim** of this thesis is to emphasise the role of the entrepreneurial orientation of established firm in the relationship between the learning behaviour and the performance results of the firm.

In order to fulfil the aim of the research, five research **objectives** have been developed:

1. To review the current research literature on the learning behaviour and entrepreneurial orientation of an established firm and to highlight the research gap.
2. To assess theoretical relationships between the learning behaviour and entrepreneurial orientation of an established firm and its performance.
3. To develop a theoretical framework explaining how the entrepreneurial orientation of an established firm affects the relationship between the learning behaviour and the firm's performance.
4. To empirically test the theoretical relations between the learning behaviour and the entrepreneurial orientation of an established firm and its performance results.
5. To provide conclusions, limitations and implications to the theory and practice.

The object of this thesis is the relationship between the learning behaviour and the entrepreneurial orientation of an established firm and its performance results.

In order to achieve the aim of this thesis, the sequential mixed methods approach was applied for this research while quantitative data gathering was followed by the qualitative multiple case study method sequentially. Questionnaire survey was used as the quantitative research method in order to depict the relationships between the learning behaviour, entrepreneurial orientation, and firm performance results. Later, a multiple case study was used to gather subjective explanations of the identified relationships and support within the conceptual model proposed in this thesis.

The structure of the thesis was developed following the logic of the research objectives. The thesis consists of six parts including introduction and conclusions. It starts with an overview of the current understanding of the related constructs and investigation of the theoretical and empirical findings of scholars within the related research fields. In order to answer to the first three objectives of the research, the thesis analyses the concepts of learning behaviour and entrepreneurial orientation of an established firm in the light of the organizational learning theory, knowledge management theory, and the entrepreneurship theory. Section One reviews the key concepts and explores theoretical relationships between the learning behaviour and

the entrepreneurial orientation of an established firm thus suggesting the conceptual model to illustrate how these key concepts relate to each other.

The second section of the thesis demonstrates the methodological approach towards investigating the research problem. It focuses on the selection of the research design to answer the research question, specifies the research methods used within this thesis, and presents an approach towards the sampling strategy. Empirical testing of the proposed conceptual model is performed, and extant analysis of empirical findings is presented in the third section of the thesis. The study is finalised by the discussion on the empirical results; it provides conclusions which take into account the implications and limitations of the conducted research, which allows drawing directions for the future research.

The research conducted within this thesis will be relevant to both academicians and practitioners. Firstly, the study contributes to the research streams of dynamic capabilities by investigation of the antecedents of dynamic capabilities – learning within the firm and the entrepreneurial orientation of the firm. Secondly, it advances the currently available studies investigating direct relationships between learning, the entrepreneurial orientation, and the firm performance by proposing that entrepreneurial orientation mediates the effect of learning on the results of firm performance. Thirdly, investigating the relationships between the learning behaviour, entrepreneurial orientation and the firm performance results in the context of developing countries as well as small and medium enterprises validates further the results of previous studies which mainly focused on large firms within developed countries.

The results of the research conducted during the preparation of this thesis were disseminated through the publication of a scientific article and presentations at international scientific conferences (see the list below):

ARTICLES PUBLISHED ON THE DISSERTATION TOPIC:

Articles in peer-reviewed scientific publications

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Indexed in the Web of Science or Scopus without Impact Factor or SNIP International Publishers

Giniūnienė, Jurgita; Jurkšienė, Lolita. Dynamic Capabilities, Innovation and Organizational Learning: Interrelations and Impact on Firm Performance // Procedia Social and Behavioral Sciences: 20th international scientific conference economics and management, ICEM-2015. Amsterdam: Elsevier. ISSN 1877-0428. 2015, vol. 213, p. 985–991. DOI: 10.1016/j.sbspro.2015.11.515. [Conference Proceedings Citation Index – Social Science & Humanities (Web of Science); ScienceDirect] [FOR: S 004] [Input: 0.500]

Jurkšienė, Lolita; **Giniūnienė, Jurgita**. Internationalizational Networks and Firm Performance: The Mediating Role of Organizational Learning and Innovation //

ECIE 2015: proceedings of the 10th European conference on innovation and entrepreneurship, University of Genoa, Italy, 17–18 September 2015 / edited by R.P. Dameri, R. Garelli, M. Resta. Reading: ACPI, 2015. ISBN 9781910810491. eISBN 9781910810507. p. 341–348. [Conference Proceedings Citation Index – Social Science & Humanities (Web of Science)] [FOR: S004] [Input: 0.500]

Articles in conference proceedings

International Publishers

Giniuniene, Jurgita; Jurksiene, Lolita; Petraite, Monika. Digital Health Solutions: The Role of Innovation Ecosystem // XXX ISPIM innovation conference: celebrating innovation: 500 years since da Vinci, 16–19 June, 2019, Florence, Italy. Manchester: ISPIM, 2019. ISBN 9789523353510. ISSN 2243-3376. p. 1–9. [FOR: S 003] [Input: 0.334]

Giniūnienė, Jurgita; Pundzienė, Asta. The Path of Opportunity Exploitation: The Role of Dynamic Capabilities and Learning // BAM2017 proceedings: Re-connecting management research with the disciplines: shaping the research agenda for the socials. London: British Academy of Management, 2017. ISBN 9780995641303. p. 1–12. [FOR: S 003] [Input: 0.500]

Giniūnienė, Jurgita; Pundzienė, Asta. The Mediating Role of Entrepreneurial Orientation in the Relationship between Organizational Learning and Firm Performance // RENT XXX: Innovation, Relational Networks, Technology and Knowledge Transfer as Drivers of Global Competitiveness, November 16–18, 2016, Antwerp, Belgium. Brussels: EIASM. ISSN 2219-5572. 2016, p. 1–14. [FOR: S 003] [Input: 0.500]

PRESENTATIONS AT RESEARCH CONFERENCES ON THE DISSERTATION TOPIC:

1) **Giniuniene, J.**; Jurksiene, L.; Petraite, M. 2019 07 16–19 XXX ISPIM innovation conference: Celebrating innovation: 500 years since da Vinci. Presentation "Digital health solutions: the role of innovation ecosystem", 16–19 July, 2019, Florence, Italy.
2) **Giniuniene, J**.; Pundziene, A. 31st annual British Academy of Management (BAM) conference "Re-connecting management research with the disciplines: Shaping the research agenda for the social sciences". Presentation "The Path of Opportunity Exploitation: The Role of Dynamic Capabilities and Learning", 5–7 September, 2017, Warwick, United Kingdom.
3) **Giniuniene J.**; Pundziene A. Research in Entrepreneurship and Small Business (RENT) conference. Presentation "The mediating role of entrepreneurial orientation in the relationship between organizational learning and firm performance", 15–17 November, 2016.
4) Jurksiene L.; **Giniuniene J.** 10th European Conference on Innovation and Entrepreneurship (ECIE). Presentation "Interorganizational Networks and Firm Performance: Mediating Role of Innovation and Organizational Learning", 17–18 September, 2015, Genova, Italy.

5) **Giniuniene J.**; Jurksiene L. 20th international scientific conference, Economics and Management 2015 (ICEM). Presentation "Dynamic Capabilities, Innovation and Organizational Learning: Interrelations and Impact on Firm Performance", 6–8 May, 2015, Kaunas, Lithuania.
6) **Giniuniene J**.; Pundziene A. Strategic Management Society (SMS) special conference "From Local Voids to Local Goods: Can Institutions Promote Competitive Advantage?". Presentation "Competitive strategy: dynamic capabilities, corporate entrepreneurship and organizational learning", 19–21 March, 2015, Chile.

1. THEORETICAL BACKGROUND ON RELATIONS BETWEEN LEARNING BEHAVIOUR, ENTREPRENEURIAL ORIENTATION, AND FIRM PERFORMANCE

This part of the thesis is built around the theoretical foundations which explain learning activities within the firm and the concept of the entrepreneurial orientation of an established firm. The section closes with the development of a conceptual model where the theoretical relations between learning behaviours, the entrepreneurial orientation, and the firm performance results are presented.

1.1. Conceptualising learning behaviour within the firm

This section of the thesis focuses on the main aspects around the learning activities within the firm. The section starts with an overview of the contributions from major theoretical foundations into the development and interpretation of learning within the firm. Next, the complexity of definitions of organizational level learning is presented, followed by a review of the learning process within the firm and different forms of such learning behaviour. The section closes with a discussion around knowledge and knowledge assets as the major outcome of learning within the firm.

1.1.1. Theories contributing to the development of the organizational level learning concept

Learning within organization may be investigated through the prism of various theories contributing to the development of both individual and collective learning activities. Emerging from such disciplines as psychology, sociology, and economy, these theories underpin the main elements of learning found within organizations. Table 1 presents the summary of some of the key theories which lie at the core of learning activities at the organizational level.

Table 1. Theories underpinning the learning phenomenon within an organization (compiled by the author)

Theoretical approach	*Theory/ model*	*Approaches to learning*
Behaviourist theory	Operant conditioning	– Learning is inferred from behaviour as the reaction to stimuli and is dependent on external factors.
Cognitive theory	Information processing model	– Conscious and unconscious processing of information and information storage.
Social learning theory	Bandura's social learning theory	– Individuals can learn through observation of social actors; – Rewarding circumstances are essential for learned behaviour to be demonstrated;

Theoretical approach	*Theory/ model*	*Approaches to learning*
		– Internal and external factors of learning are combined.
Educational theory	Situated learning	– Learning outcomes are specific to the social situations where learning has occurred; – Collaboration and interaction with others is important for learning.
	Experiential learning	– Dynamics between reflective observation and active experimentation; – Balancing between experience and abstract conceptualization.
	Andragogical learning	– Importance of self-direction and experience; – Learning for self-esteem, recognition from others.
Collective learning theories	Action learning	– Learning through the process of solving real tasks and problems; – Reflection and questioning is an integral part of the learning process.
	Learning organization	– Learning enhances the organization's capacity to create; – Shared vision, empowerment and continuous learning are essential aspects of a learning organization.
Theory of the firm	Resource-based view	– Valuable, rare, inimitable and non-substitutable strategic resources for gaining and sustaining competitive advantage.
		– Tacit knowledge, social complexity, causal ambiguity, co-specialization of assets, and unique historical conditions form resource isolation mechanisms.
	Dynamic capabilities	– Learning is an essential element in developing capabilities in the dynamic environment; – Learning is a continuous process; – Learning is not limited to the internal environment and internal resources of the firm.
	Knowledge-based view	– Knowledge is perceived as one of the most valuable intangible strategic resources; – Knowledge sustains its value during the time of both internal and external changes.

Each of these theories contributed to the development of the learning concept within organizations. Behaviourist, cognitive, social learning, and educational theories built the ground for individual approaches to learning. Behaviourist theories of learning perceive the learning process as the delivery of predefined learning content to individuals with feedback, rewards and remediation (Borthick, Jones, and Wakai, 2003). In the cognitive approaches to learning, memory and the associated cognitive processes are at the core of learning activities, whereas the social learning theory is concerned with the way how social influences impact the individual learning experience and its outcomes. According to the social learning theory, self-efficiency and motivation play a significant role in the learning process. Educational theories brought into the learning process the experience element, interaction with others, and the individual willingness to learn thus making the learning process more complex and self-oriented.

The theory of the firm made a huge contribution to recognising learning not exclusively as individual and collective activities, but also due to looking at the organizational level learning. The resource-based view (RBV), the dynamic capabilities view (DCV), and the knowledge-based view (KBV) jointly emphasised learning and the outcomes of learning as a firm-specific resource that allows enterprises to create and sustain competitive advantage. RBV enabled the emergence of the organizational competences concept (Prahalad and Hamel, 1990). This resulted in the understanding that as the outcome of collective learning activities within the firm, competences allows integration of the resources and services. DCV further elaborated on the role of learning activities in developing sensing, seizing and reconfiguring capabilities of the firm (Teece *et al*., 1997) thus emphasising dynamic conditions under which learning activities might be mostly advantageous.

1.1.2. Overview of the conceptualization of learning behaviour

The concept of learning behaviour is rooted in the framework of organizational learning that has been researched and analysed for more than 30 years. Interest in organizational level learning became salient due to the understanding that learning plays a crucial role in adaptation to external conditions and ability to react to an uncertain environment (Moingeon and Edmundson, 1996). Organizational learning was for a long time seen as a sum of individual learning efforts within the firm (Wang and Ahmed, 2001). It was understood as individual detection and correction of error(s) within the context of an organization where an error was seen as a conflict between the intended achievements and something that has actually been achieved (Argyris and Schon, 1996). Learning was regarded as an intra-organizational process that was aimed at the adaptive process to detect errors through an individual employee's behavioural and cognitive changes (Antonacopoulou *et al*., 2005).

Later approaches to organizational learning emphasise dynamism and suggest that learning is intertwined with organising. Organizational learning in this context is seen as the process of gaining the required information for the firm and developing from it the firm-specific knowledge (Franco and Haase, 2009). The ability to recognise opportunities for development and the creation of new knowledge is becoming an important task for organizational learning processes, and organizational

learning is starting to be viewed as the acquisition of knowledge that is recognised as important for the firm (Leicht and Harrison, 2011). These approaches to organizational learning acknowledge not only intra-organizational learning possibilities but also emphasise inter-organizational such learning activities as absorptive capacity and network learning (Easterby-Smith, 2011).

Table 2 provides an overview of some of the key definitions of the concept of learning within organizational settings.

Table 2. Conceptualising organizational level learning
(compiled by the author)

Author(s)	*Year*	*Definition*
McGill and Slocum	1993	"Process by which managers become aware of the qualities, patterns and consequences of their own **experiences** and **develop mental models** to understand these experiences".
Argyris and Schon	1996	"The **detection and correction of error**", where error is seen as the conflict between intended achievements and what is actually achieved.
Moingeon and Edmondson	1998	"A process in which an organization's members actively use data **to guide behaviour** in such a way as to promote the ongoing **adaptation** of the organization".
DeSimone and Harris	1998	"Organizational learning means that **everyone** in the organization is engaged in identifying and solving problems, enabling the organization to continuously **experiment**, improve and increase its capability".
Jerez-Gomez *et al*.	2005	"The capability of an organization to **process knowledge** and to **adjust** its behaviour to reflect the new cognitive situation for the purpose of improving its performance".
Schuler and Jackson	2007	"Organizational learning means that organization has in place systems and procedures which help it to **learn from its work processes, problems and mistakes**".
Spender	2008	"Internal **adaptation** processes triggered by some kinds of task requirements between organizational members and external challenges and competitive pressures in the environment".
Franco and Haase	2009	The process of gaining required information for the firm and developing from it firm specific **knowledge.**
Santos-Vinjande *et al*.	2012	Organizational learning is a result of individual **knowledge** transfer, which "occurs through interactions to different groups of individuals because of **shared interpretation**".
Zhou, Hu, and Shi	2015	Organizational learning is the capability of the firm to **adapt** to its environment.

Conceptual analysis of the definitions of learning at the organizational level suggests that learning might be perceived as a tool for adapting to the requirement which arises from both internal and external environment of the firm. It is evident within the literature that the outcome of learning behaviours within the firm must contribute to the adaptation to competitive pressures and to the improvement of the performance of the firm (DeSimone and Haris, 1998; Jerez-Gomez *et al*., 2005; Spender, 2008). The presented definitions on learning within the firm suggest that experience and experimentation are among the key aspects in learning activities within the firm, as they lead to knowledge development within the firm. Thus, for the purpose of this research, the term of *learning behaviour* is used as individual, collective and organizational activities within the firm which are aimed at the exploitation of the existing knowledge, competences and experience as well as acquisition and development of new knowledge through experimentation with new approaches and ideas (Fiol and Lyles, 1985; Huber, 1991; Jerez-Gomez *et al*., 2005; Chiva *et al*., 2007; Santos-Vinjande *et al*., 2012).

Further sections lead to the discussions on experience and experimentation elements of the learning behaviour separately; they also overview the role of knowledge within the learning processes at the firms.

1.1.3. Elaborating on the aspect of experience in learning activities within the firm

It has been argued throughout the literature on organizational level learning that the experience of a firm is built through the trial-and-error path, which occurs through engaging into different levels of learning within the organization. Researchers distinguish between two different levels of learning at the organizational level. Argyris and Schon (1996), for instance, differentiate between single-loop and double-loop learning. The former is the process of error correction where changes are made to the routine behaviour (Argyris and Schon, 1996; van Grinsven and Visser, 2011); the latter involves questioning and re-framing the currently existing models, guiding decision making and behaviour in response to the changes in the external environment, consequently developing new ways of working. Single-loop learning occurs when a firm deals with discontinuous changes in the external environment without changing the assumptions and goals which guide the firm's actions (Sadler-Smith, 2008). The only change that takes place within a firm during single-loop learning is the shift in the norms of the firm (Ambrosini, Bowman, and Collier, 2009). Single-loop learning deals with immediate tasks and focuses primarily on the learners' actions (Sadler-Smith, 2008); it has been found to have no significant impact on the learners' awareness and development (Cope and Watts, 2000). New skills and capabilities are learnt during single-loop learning through incremental improvements (Eilertsen and London, 2005).

Double-loop learning occurs when a firm, in order to respond to the changes in its environment, modifies the underlying model that guides its actions (Sadler-Smith, 2008). According to Argyris and Schon (1996), change in an enterprise's norms, values, and objectives must happen because its usual methods for error correction are

not sufficient. Table 3 presents an overview of various models of learning drawn from the literature on organizational learning.

Table 3. Models of learning
(compiled by the author)

Author(s)	*Year*	*Levels of learning*	*Key features*
Argyris and Schon	1996	Single loop and double loop learning	Result of single-loop learning is an adjustment of established ways of working in pursuit of goals under existing sets of assumptions, whereas double-loop learning is a "process of questioning organizational norms and values, and building a new frame of reference".
Bateson	1972	Bateson's learning levels	Learning levels 0 to IV where Level 0 learning is seen as the response to the stimuli to learn but no changes occurs (non-learning), Level I and Level II learning correspond to single loop and double loop learning, and Level III and Level IV are aimed at changes within the system and the society.
Fiol and Lyles	1985 (as cited in Spicer (2004))	Lower level and higher level learning	"Lower level learning is relatively simple and may be no more than repetition of past behaviour. Higher level learning results in the development of new complex rules, which change behaviour".
Senge	1990	Adaptive and generative learning	"Adaptive learning is concerned with improving a procedure or behaviour", while "generative learning involves questioning this procedure, behaviour or assumption".
Virany, Tushman, and Romanelli	1992	First order and second order learning	"First-order learning involves adapting actions and routines within existing (mental) frameworks and underlying assumptions, whereas second-order learning challenges the very frameworks and assumptions that underlie such actions and routines".
Levinthal and March	1993	Exploitation and exploration in learning	"Exploitative learning is characterised as routinised learning, which adds to the existing knowledge and competencies of a firm without changing the nature of its

Author(s)	*Year*	*Levels of learning*	*Key features*
			activities. Explorative learning is non-routinised learning and involves changes in company routines and experimentation with new alternatives which, if successful, does change the nature of competencies of companies and it increases their innovative performance".
Miner and Mezias	1996	Incremental and radical learning	"Incremental learning is about error detection and correction that permits the organization to retain existing policies, procedures and objectives, whereas radical learning is about error detection and correction that requires change to the organization's existing policies, procedures and objectives".
Snell and Chak	1998	Triple loop and quadruple loop learning	Triple loop learning is aimed at changes within the culture of organization, spirit and climate of organization. Quadruple loop learning is used for changes to be made within society as a whole.
Runciman *et al*.	2006		
Yuthas *et al*.	2004		
Visser	2007	Deutero and meta learning	Deutero learning is mainly seen as unconscious adaptive behaviour that is largely based on communication within organization. Meta learning is considered to be a conscious reflection of single loop or double loop learning.
Simonin	2017	N-loop learning	N-loop learning reflects Bateson's levels of learning, where lower N-loops are aimed at zero learning and Level I, Level II learning, and higher N-loops reflect Level III and Level IV learning. This kind of learning also takes into account the type of learner (N-type) and the nature of learning itself (N-way).

Despite the diverse typologies, Sadler-Smith, Spicer, and Chaston (2001) argue that there are two distinct types of learning. Lower dimension (single-loop; lower-level; first-order; exploitative; incremental; adaptive) learning indicates passive orientation to learning that is concerned with the adaptation of what is already known. Higher dimension (double-loop; higher-level; second-order; explorative; radical; generative) learning indicates active orientation to learning that involves developing new skills and generating new knowledge.

Researchers argue that both dimensions of learning are needed in order for a firm to survive (Raisch and Birkinshaw, 2008; Jansen, Van den Bosch, and Volberda, 2006). However, some have noticed that both dimensions compete for the same resources of the firm; therefore, the relationship between these dimensions may be conflicting (Levinthal and March, 1993; van Grinsven and Visser, 2011).

1.1.4. Experimentation as the component part of firm level learning

Experimentation is perceived within the literature on firm level learning as one of the central activities for the firm to develop new knowledge that is special for one particular organization (Dess *et al*., 2003). Learning by experimentation, therefore, is related to activities which enhance behaviour associated with trying new processes, methods, and activities within the firm's setting. Learning throughout the activities of experimenting within the environment that encourages trying out new approaches and combinations of actions might be perceived as the basis for successful development of knowledge assets for the firm. The basis for this kind of organizational level learning was found to be firm-distinctive processes, documents, routines (Matusik, 2002).

The extensive literature on organizational level learning suggests that experimentation is one of the central dimensions of learning capability within the firm which leads to effective engagement into a learning organization (Migdadi, 2019). The capability to learn and the concept of a learning organization lie at the centre of the theory of organizational learning. Thus, such a focus on these elements within the theory demonstrates the power of the dimensions that these elements consist of. Experimentation as a form of learning behaviour enables firms to approach and implement new ideas by engaging into collective creation (Swift and Hwang, 2008). According to Chiva *et al*. (2007), experimentation together with risk taking, knowledge transfer and integration, managerial commitment as well as empowerment and interaction with the external environments form 5 dimensions of learning capability and create conditions for a learning organization, which in turn leads to the innovative performance and competitive advantage gained through learning activities within the firm (Migdadi, 2019).

It might be noticed throughout the literature on organizational level learning that learning through experimentation creates firm-specific knowledge (Huber, 1991), which later allows firms to be innovative and creative. This type of learning behaviour within the firm is strongly associated with innovation activities as it promotes knowledge openness within the firm and focuses on creative thinking, exploitation of innovative approaches (Zahra, Ireland, and Hitt, 2000). It is assumed that, this way, a firm is able to develop products and services that might be the source of its competitive advantage (Zahra and Garvis, 2000).

Learning by experimentation is often associated with the learning-by-doing approach, and it has been found to assist firms in understanding in more detail the knowledge that the firm already possesses as well as in accumulating tacit knowledge (Reed and DeFillippi, 1990; Hitt, Ireland, and Lee, 2000).

Zahra *et al*. (2006) argued that, together with knowledge advancement that the use of experimental learning enables within the firm, it also allows constructing an

environment needed for new knowledge. This way, the firm will also be able to apply new knowledge more efficiently.

1.1.5. Process of learning within the firm

The organizational learning process is continuous and dynamic; it requires resources of time. As proposed by Huber (1991), the process of organizational learning encompasses the following sub-processes:

- knowledge acquisition. The knowledge acquisition phase is where internal and external knowledge is absorbed from various sources. Internally, the knowledge acquisition phase is based on learning from experience, both individual and other (Martinez-Leon and Martinez-Garcia, 2011). External knowledge is gathered from markets, customers, competitors, and technologies. During the acquisition of knowledge and information phase, learning must be directed in a way that allows sensing new opportunities which might arise from the gathered information and knowledge. Based on the individual and organization's experience, new information will be evaluated. Teece (1998) proposed several techniques which might be used for effective acquisition of knowledge and information. These techniques include 'scenario planning' and 'action plans'. Scenario planning can help managers to create a mindful map of the possible ways to use information and knowledge that has been gathered. Action plans are based on the evaluation of organizational routines, procedures, and policies which would allow later use of new information and knowledge. These exercises would potentially help to identify the relevant knowledge, and absorb it to the organization.
- information distribution and interpretation. After an organization has gathered the required knowledge and information, it is then spread across the organization and interpreted. Here, the organizational structure for immediate decision-making would be beneficial. Great attention has been paid within the literature on dynamic capabilities to the importance of the decision-making aspect in dynamic capabilities (Helfat *et al*., 2007; Corbett and Neck, 2010). Corbett and Neck (2010) in their study explored the cognitions of managers who are building dynamic capabilities within their firms in order to bring innovative ideas. The study showed that three underlying cognitive scripts might be identified: arrangement scripts, willingness scripts, and ability scripts. *Arrangement scripts* might be defined as "the knowledge structures one has regarding the various tools, contacts, relationship resources, and assets one has at his/her disposal" (Corbett and Neck, 2010, p. 6). *Willingness scripts* refer to the knowledge structures that illustrate the way an individual thinks about the arising opportunities and becomes committed to them (Mitchell, Smith, Seawright, and Morse, 2000). As suggested by Corbett and Neck (2010), willingness scripts might be seen as the basis for corporate entrepreneurship because willingness scripts help individuals collectively seek new opportunities for the firm. Ability scripts are the knowledge structures which surround the norms, knowledge and abilities that are

required to complete the task (Corbett and Neck, 2010). Abilities enable individuals to know how to change organizational processes, and how to apply the knowledge base to new situations. The theory of these cognitive scripts suggests that when managers have a clear mental model developed for each of the above discussed scripts and understand how they act together, they may acquire and transform new knowledge more efficiently, and their overall performance may become more effective.

– shared organizational memory. In order to be able to access the gathered and created knowledge and information in the future organizational systems, rules or procedures to store the new knowledge are built.

Expanding on Huber's (1991) model of learning at the organizational level and taking into account Nevis, DiBella, and Gould's (1995) and Slater and Narver's (1995) considerations, Sadler-Smith (2008) developed a synthesised model of the organizational level learning process (see Figure 1).

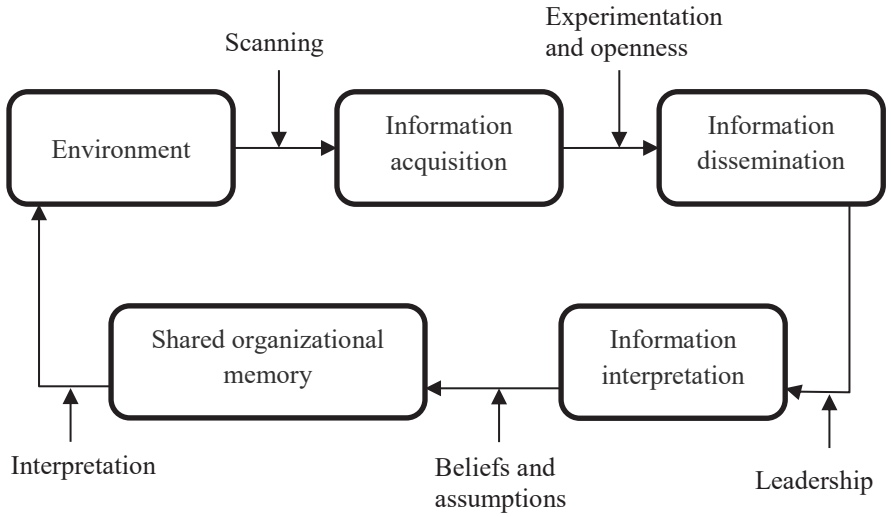

Figure 1. Process of learning at the organizational level (adapted from Sadler-Smith (2008))

The model suggests that, together with information acquisition, distribution, interpretation and organizational memory sub-processes, the environmental input plays a significant role in the process of learning within organization. Together, all of these sub-processes form the cycle of learning where environmental inputs act as a connector and serve both as the starting point for the learning process within the organization and at the same time close the cycle. Environmental inputs coming from scanning activities lead to information acquisition where the information which is not stored in the current systems of the organization is absorbed. Later, the acquired information is disseminated. The success of the information dissemination sub-process depends on the organizational culture of openness and willingness to

experiment. Next, shared mental models are created within the organization, which leads to the storage of new information into the organizational memory as a means of procedures, protocols, standards, or mission statements. Some of the information is stored in social interactions, or in participation in communities of practice.

1.1.6. Knowledge flows in learning activities within the firm

Research literature suggests that learning at the organizational level creates the conditions for developing new knowledge assets of the firm (North and Kumta, 2018) which later might be used by other activities within the firm, including entrepreneurial activities (Chung, Yang, and Huang, 2015). Knowledge assets are intangible resources of the firm which are of high strategic value (Moustaghfir, 2008).

As argued by Pollok, Lüttgens, and Piller (2019), learning activities at the organizational level form the basis for developing new knowledge, which allows employees to suggest new ideas. Furthermore, it assists firms in adapting to the changing business environment and in taking proactive actions for enhancing business performance (Farzaneh, Ghasemzadeh, Nazari, and Mehralian, 2020).

Franco and Haase (2009) perceive knowledge development as a three-stage process:

- *Knowledge creation.* At this phase, new knowledge is created within an organization as an outcome of individual and collective learning activities.
- *Knowledge distribution.* Once new knowledge has been developed, it must be available for sharing among the members of the organization.
- *Knowledge application.* Finally, when new knowledge has been created and distributed, it may be applied for various activities within the organization, including activities that relate to the development of new products or services.

Successful implementation of these stages of knowledge development influences positive outcomes of learning on the firm performance results including financial performance and productivity (Levinthal and March, 1993; Franco and Haase, 2009).

The importance of knowledge in the learning process at the firm level is also argued by Huber (1991) who suggests that learning at the organizational level must capture four sub-processes: knowledge acquisition, information distribution, information interpretation, and shared organizational memory. Throughout the knowledge acquisition phase, internal and external knowledge is absorbed from different sources. Internally, the knowledge acquisition phase is based on learning from experience, both individual and other (Martinez-Leon and Martinez-Garcia, 2011). External knowledge is gathered from markets, customers, competitors, and technologies. After the firm has gathered the required knowledge and information, it is then spread across the firm and interpreted. In order to be able to access the gathered and created knowledge and information in future organizational systems, rules or procedures to store new knowledge are built.

Types of knowledge. Knowledge is a complex and multidimensional asset of the firm which might be reflected in different ways within different contexts. It is acknowledged that different types of knowledge exist. The primary distinction is between the tacit knowledge category and the explicit knowledge category (Polyani 1958):

- explicit knowledge. Bingham and Eisenhardt (2011) define explicit knowledge as the outcome of collective learning from experience. This kind of knowledge might be formalised, communicated within the organization and stored by employees for future use. Communication is found to be the main way for revealing explicit knowledge (Spender, 1996).
- tacit knowledge is the knowledge that is embedded in an individual's mind. As suggested by Polanyi (1995), the tacit dimension of knowledge suggests that individuals know more than they can tell (Polanyi, 1958). As discussed in Section 1.1.4., learning from experimentation activities is found to enhance the development of tacit knowledge (Reed and DeFillippi, 1990; Hitt *et al*., 2000). Learning activities creating the conditions for trying out new approaches towards completing tasks and routines enable the exploitation of tacit knowledge by individual members of the organization. Therefore, later on, this knowledge provides a chance to become explicit knowledge as long as new routines and approaches are repeatedly used.

Researchers acknowledge that the tacit and explicit dimensions of knowledge may be found at the individual level as well as at the collective level at an organization (Peruffo, Marchegiani and Vicentini, 2018). Nonaka (1994) argued that the learning process is built on the combination of the tacit and explicit dimensions of knowledge. Since then, several models have emerged explaining how these different types of knowledge may be combined. Table 4 depicts some examples of such models.

Table 4. Models for combining knowledge dimensions
(compiled by the author)

Author(s)	*Suggested model*	*Approach*
Nonaka and Takeuchi (1995)	SECI (socialisation, externalisation, combination and internalisation) model	"Tacit knowledge is converted to explicit knowledge in order to be shared by one person and back again to tacit knowledge when internalised and adopted by another person, and the continuing sequential process of SECI".
Spender (1996)	Matrix of organizational knowledge	"The dimensions in this matrix are individual explicit (conscious knowledge), individual tacit (automatic knowledge), collective explicit (objectified knowledge) and collective tacit (collective knowledge)".
Sanchez (2005)	Continuum of knowledge	"Emergence of new knowledge" on one end, and 'embedding' or adoption of new knowledge, on the other end.

The SECI model which was developed by Nonaka and Takeuchi (1995) is built on the idea of the knowledge spiral and explains the process of knowledge conversion from tacit to explicit and from explicit to tacit. The SECI model is found to be a dynamic process of knowledge conversion for the purpose of individual, organizational and inter-organizational increase of the existing knowledge and development of new knowledge (Farnese, Barbieri, Chirumbolo, and Patriotta, 2019).

Spender (1996) suggested exploring the tacit and explicit dimensions from the positions of individual and collective efforts. Therefore, he introduced the matrix of organizational knowledge explaining the four dimensions of knowledge.

Sanchez (2005) emphasised the process of knowledge emergence and adoption and incorporated different dimensions of knowledge into the knowledge continuum. The continuum of knowledge might be embedded within the organization through various processes, organizational systems, and the organizational culture. The model of knowledge continuum also considers the individual and social aspects of learning for the development of new knowledge. The social aspect is necessary for the emergence of new knowledge, whereas the individual aspect is essential for adopting new knowledge.

In any way, the transformation of tacit knowledge into explicit knowledge requires certain organizational structures and processes for enhancing interactions and activities between individuals and groups (Peruffo *et al*., 2018). Formal organizational processes allow firms to form experience-based heuristics, which, in fact, forms the object or learning activities within organizations (Bingham and Eisenhardt, 2011).

1.2. Analysis of the concept of firm's entrepreneurial orientation

Changes within the operating environment and pressures to cut costs, TO produce more while delivering greater quality, and to introduce innovative products and services have forced entrepreneurs to focus not merely on the creation of new ventures but also on the changes within the internal processes of the established firms. This resulted in many organizations increasingly the search for 'entrepreneurial notion' as a way to respond to the aforementioned pressures. The entrepreneurial orientation of an established firm is here seen as an attempt to take attitudes and competences of regular entrepreneurs and to infiltrate these characteristics into routines and processes of an existing firm.

Entrepreneurial orientation within the available academic literature is defined as entrepreneurial actions at the firm level (Wiklund and Shepherd, 2005). Throughout the developments of the entrepreneurial orientation concept, scholars investigating it named the same concept differently (see Table 5).

Table 5. Concept of entrepreneurial orientation
(compiled by the author)

Name of the concept	***Definition***	***Authors***
entrepreneurial mode	Entrepreneurial mode is one of strategic planning modes where the leader searches for new opportunities and is willing to take bold actions for high profits.	Mintzberg, 1973
entrepreneurial intensity	The degree and extent to which a firm demonstrates entrepreneurship.	Morris and Sexton, 1996
entrepreneurial proclivity	"The organization's predisposition to accept entrepreneurial processes, practices, and decision making".	Griffith *et al*., 2006 (p. 52)
intrapreneurship	"Entrepreneurship within an existing organization, referring to emergent behavioural intentions and behaviours of an organization that are related to departures from the customary".	Antoncic and Hisrich, 2003 (p. 9)
corporate entrepreneurship	"The sum of a company's innovation, renewal, and venturing efforts. Innovation involves creating and introducing products, production processes, and organizational systems. Renewal means revitalising the company's operations by changing the scope of its business, its competitive approaches, or both. It also means building or acquiring new capabilities and then creatively leveraging them to add value for the shareholders. Venturing means that the firm will enter new businesses by expanding operations in existing or new markets".	Zahra, 1996 (p. 1715)

However, all the developments of the construct have emphasised in one or another way the importance of new ideas, innovation within the firm, propensity to risk-taking of the firm, and readiness to be active in taking bold actions. All the proposed conceptual developments reflect the way of strategical planning while using certain methods of practice, adopting particular styles of decision making, and taking certain leadership roles. Even though scholars agree on the necessity to incorporate reflections of the entrepreneurial orientation into processes and routines within the firm, the debate is still evident on the dimensions of the construct *per se* (Miller, 1983; Covin and Slevin, 1989; Lumpkin and Dess, 1996).

Further sub-sections explore the dimensions of the entrepreneurial orientation construct as well as identify drivers for entrepreneurial behaviour within the firm which emerge from the currently available scientific literature. Finally, the processes of opportunity identification and opportunity exploitation within an established firm are discussed.

1.2.1. Exploration of dimensions of the construct of entrepreneurial orientation

Throughout the development of the entrepreneurial orientation concept, the variation within the dimensions of this construct may be observed. The early research of the entrepreneurial orientation construct suggested three core dimensions (Miller, 1983; George and Marino, 2011; Covin and Slevin, 1989):

- *Innovativeness dimension* within the entrepreneurial orientation construct is expressed through a firm's willingness to promote creativity and provide environment for experimentation. Therefore, innovativeness may be defined as the aim to pursuit creative and innovative solutions and challenges within the firm (Knight, 1997).
- *Risk-taking dimension* may be seen as the tendency within the firm to take bold actions. It may be defined through the willingness to dedicate a large portion of resources to the development of ideas whose outcomes are unclear (Miller and Friesen, 1978). Within the firm setting, higher levels of risk-taking mean accepting possible high costs of failure.
- *Proactiveness dimension* reflects the way firms respond to market demands or existing trends. It demonstrates how a firm responds to the external environment, demands of the market, and new trends (Real *et al*., 2014).

Many researchers focus their work on these dimensions and build their work on the developments of Covin and Slevin (1989) who argued for the unidimensionality of the construct of entrepreneurial orientation. Covin and Slevin (1989) suggested that a firm needs to have and demonstrate all the three dimensions of entrepreneurial orientation. However, other conceptual developments suggested entrepreneurial orientation being a multidimensional construct (Lumpkin and Dess, 1996; Hughes and Morgan, 2007). This argument is built on the idea that the individual influence of each dimension of entrepreneurial orientation exists. Furthermore, Lumpkin and Dess (1996) proposed to extend the number of dimensions within the construct of entrepreneurial orientation and suggested adding two further dimensions to the existing innovativeness, risk-taking and proactiveness dimensions of the entrepreneurial orientation constructs:

- *Autonomy dimension* is perceived as the ability of an individual or a team to act independently within the firm while developing new ideas for business (Lumpkin and Dess, 2001).
- *Competitive aggressiveness dimension* "*reflects the intensity of a firm's efforts to outperform industry rivals, characterised by a combative posture and a forceful response to competitor's actions*" (Lumpkin and Dess, 2001, p. 431).

Further developments of the entrepreneurial orientation construct suggested re-grouping the earlier suggested dimensions of the construct. Anderson *et al*. (2015) argued that researchers should focus on two dimensions of entrepreneurial orientation:

- *Entrepreneurial behaviour* is perceived to consist of innovativeness and proactiveness elements and is defined as "*the firm level pursuit of new products, processes, or business models (e.g., innovativeness) with the*

intended commercialisation of those innovations in new product/market domains (e.g., proactiveness)" (Anderson *et al*., 2015, p. 1583).

- *Attitude towards risk* is based on the risk-taking dimension. Attitude towards risk, therefore, is defined "*as an inherent managerial inclination existing at the level of the senior manager(s) tasked with developing and implementing firm level strategy favouring strategic actions that have uncertain outcomes*" (Miller, 1983 as cited by Anderson *et al*., 2015, p. 1583).

Anderson *et al*.'s (2015) reconceptualization of entrepreneurial orientation construct led towards the distinction between the attitude and behaviour-related factors within the construct of entrepreneurial orientation. This way, the risk-taking dimension reflects the attitude of the firm, while innovativeness and proactiveness form behaviours within the firm.

In the light of entrepreneurial orientation within the existing firm, Lumpkin and Dess (1996) suggested an interpretation on entrepreneurial orientation which is not completely appropriate because it focuses on the 'new entries', while Covin and Slevin (1989) reflected the processes of the firm. For this reason, this thesis follows the three dimensions of entrepreneurial orientation: innovativeness, risk-taking, and proactiveness. However, the multidimensional approach towards entrepreneurial orientation is taken into account within this study as, nowadays, when dynamic changes within the environment of the firm are extremely turbulent, firms may have to rely on certain activities associated with not necessarily all the three dimensions of entrepreneurial orientation.

1.2.2. Drivers for entrepreneurial behaviour within a firm

Research on the entrepreneurial orientation of an established firm has revealed that entrepreneurial orientation might be determined by internal factors within the firm (Hornsby, Naffziger, Kuratko, and Montagno, 1993; Wicklund and Shepherd, 2003) and external factors outside the firm (Zahra, 1991; Lumpkin and Dess, 2001). External factors typically include the competitive environment of the firm (Zahra, 1991; Dess *et al*., 1997) and focus on the technological aspect, the growth of the industry and the market, as well as the environmental dynamism. However, in order to be successful at enhancing entrepreneurial behaviour, firms must also take into account organizational factors that might affect the willingness of their employees to engage into entrepreneurial activities and support the manifestation of the entrepreneurial orientation within the firm. Hornsby *et al*. (1993) identified four groups of key organizational factors which influence the entrepreneurial behaviour within the firm:

- *Management support* which should be referred to as the extent to which an individual team member feels that the top managers are willing to facilitate and promote entrepreneurial behaviour. It is regarded as a way how management structures by themselves enable employees to believe that innovation and the entrepreneurial attitude are part of the organization. Sebora, Theerapatvong, and Lee (2010) found that the management

support is actually the willingness of managers to enable entrepreneurial actions within the organization.

- *Time availability*. The leader of the company must ensure time availability for the followers to innovate and act entrepreneurially (Sebora *et al*., 2010). As Hornsby *et al*. (2002) emphasised, the development of new ideas requires time to rethink those ideas. The management should moderate the load of work to allow employees to engage in often long problem solving process.
- *Rewards.* The literature on the firm level entrepreneurship suggests that an effective system of *rewards* within the organization should take into account the strategic goals as well as each team member's responsibilities, and should be orientated to result-based rewards (Sebora *et al*., 2010). Rewards enhance the motivation of individuals to engage into innovative and entrepreneurial behaviour. As the expectancy theory (Vroom, 1964) suggests, an individual needs to believe that the accomplishment of a particular task will ultimately lead to the reward.
- *Job autonomy* is found to be one of the core elements in the assessment of the climate for entrepreneurial activities within an existing firm (Hornsby *et al*., 1993). Team members have the discretion to make decisions about performing their own work in the way that they believe is most effective. As suggested by Barling, Slater, and Kelloway (2000) leaders within entrepreneurial organization seek to promote self-management within the followers. Research evidence has shown that transformational leaders (firm level entrepreneurs) are willing to empower followers by giving them high job autonomy (Smith, Montagno, and Kuzmenko, 2004; Ling, Simsek, Lubatkin, and Veiga, 2008). Defined as the ability to determine independently how to do the job or the task, the job autonomy construct has been empirically associated with innovative work behaviour (De Jong and Den Hartog, 2005) and personal initiative, problem solving (Parker, Bindl, and Strauss, 2010).

Furthermore, firm resources (both financial and non-financial) and access to these resources are found to belong to the central factors influencing the entrepreneurial orientation within a firm (Covin and Slevin, 1991).

1.2.3. Firm level opportunity identification and exploitation

One of the key characteristics of any kind of entrepreneurial behaviour is the ability to recognise and exploit opportunities within the external and internal business environment. Opportunity identification and exploitation has been extensively analysed in the field of entrepreneurship and corporate entrepreneurship (Sharma and Chrisman, 1999; Shane and Venkataraman, 2000; Salvato, Sciascia, and Alberti, 2004). This attention to the opportunity exploitation process may be explained by highlighting the value which successful opportunity exploitation creates for the firm. Through the effective allocation of resources required for the identified opportunities,

opportunity exploitation allows building effective business systems and processes in order to gain returns from the captured opportunities (Choi and Shepherd, 2004).

Continuous engagement with the surrounding environment in order to capture and exploit new opportunities is argued to be one of the main activities of entrepreneurially-minded firms seeking to achieve and sustain competitive advantage (Villiers-Scheepers, 2012).

Salvato *et al*. (2004) suggest that firms succeeding in sustaining competitive advantage through the periods of rapid change and economic uncertainty discover and exploit innovative entrepreneurial opportunities effectively. Specifically, opportunity identification and the ability to respond to these opportunities through the development of new processes, products, or services is a primary consideration of the research of dynamic capabilities (Drnevich & Kriauciunas, 2011). Firms have a chance to make a better use of the resources at their disposal and the resources that are discoverable in the external environment. Salvato *et al*. (2004) argue that a firm and the individuals performing the decision-making roles within that firm are able to recognise, exploit, and utilise entrepreneurial opportunities because of their ability to access and successfully apply the information gained from inside and outside the firm. Moreover, literature on corporate entrepreneurship emphasises that the creation of opportunities requires sensing, developing, evaluating, and reframing opportunities (O'Connor & Rice, 2001). Opportunity exploitation in itself is about gathering the required resources and getting involved in the series of activities which are aimed at informing different parties about the opportunity (Shane & Venkataraman, 2000). This way, the opportunity exploitation process is closely linked to the activities reflected in the literature on dynamic capabilities.

At the level of an established firm, entrepreneurial processes are found to be continuous and aimed at recognising, capturing, evaluating, and exploiting opportunities (Shane and Venkataraman, 2000; Franco and Haase, 2009). Latour (2005) further developed Shane and Venkataraman's (2000) view and suggested another entrepreneurial process at the level of the firm level entrepreneurship: legitimation of opportunities (see Figure 2).

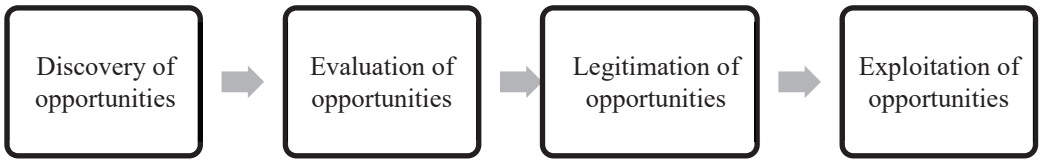

Figure 2. Activities of firm level entrepreneurship
(Adapted from: Shane and Venkataraman, 2000; Latour, 2005; Hayton and Kelley, 2006)

Discovery is about the recognition of new opportunities within the environment. Discovery activities involve the expansion of current knowledge bases and the ability to see the potential value. Evaluation is a form of assessment which includes the assessment of the market, risk, demand, profit, and cost (Mitchell *et al*., 2000). Evaluation activities result in the legitimation of opportunities by gaining approval from higher management (Morris & Lancaster, 2006). Finally, the process

is finalised with the exploitation of the identified opportunities and the incorporation of various actions for bringing new ideas to the market. Opportunity exploitation is also related to resource accumulation and the organizational culture (Shane, Locke and Collins, 2003).

It is suggested in the literature on the firm level entrepreneurship that entrepreneurial orientation results in an easier identification of opportunities and the successful deployment process of the identified opportunities (Wiklund and Shepherd, 2011).

1.3. Analysis of the concept of firm performance

Firm performance has received great attention within management research as it is viewed as one of the major outcomes of firm practices, processes and activities. Firm performance may be understood as the part of organizational effectiveness which specifically covers operational and financial outcomes of firm activities (Santos and Brito, 2012). The most commonly expressed dimensions of the construct of the performance of a firm are presented in Table 6.

Table 6. Approaches to the concept of a firm's performance
(Developed by the author)

Type of firm performance	***Approach to measurement***	***Authors***
Financial performance of a firm	Measurement of the performance of a firm focusing on objective financial information in relation to the growth of sales, market share, profits, return on investments, return on assets, etc.	Greenley (1995); Yilmaz *et al*. (2005); Keskin (2006); Baker and Sinkula (2009); Milia and Birdi (2009); Santos-Vijande *et al*. (2012)
Non-financial performance of a firm	Measurement of the performance of a firm focusing on operational excellence, customer satisfaction, product leadership, innovation, efficiency, job satisfaction, etc.	Kaplan and Norton (2001); Rai *et al*. (2006); Goh *et al*. (2012); Wu and Chen (2014)
Competitive performance of a firm	Measurement of success indicators in relation with major competitors.	Frank *et al*. (2012); Dulger *et al*. (2014)

It was firstly assumed that the economic factors of firm performance are substantial indictors of the firm's success or failure (Hansen and Wernerfelt, 1989). Economic or financial indicators typically include information on the firm's financial data (profits, sales, market share, exports, revenue, etc.). Even though economic or financial firm performance uses objective data, later developments in the research on firm performance included more intangible indicators focusing on organizational factors and the manager's perception of the firm's competitive positions. Non-financial or organizational firm performance concentrates on the customer and employee satisfaction as well as innovation performance. Barney and Clark (2007)

argue it that satisfied customers are ready to pay for the products or services, and, therefore, increase the overall value of the firm. Furthermore, employee satisfaction was found to impact the firm's ability to attract and retain human resources (Santos and Brito, 2012). Moreover, it was established that satisfied employees exhibit lower turnover rates. Together with organizational indicators, innovative performance was found to be part of the non-financial performance of a firm, and it includes product leadership and the combination of the firm's assets and resources (Rajapathirana and Hui, 2018). Firms demonstrating the innovative approach towards organizational processes and activities are found to be able to increase their financial outcomes.

Competitive firm performance or subjective firm performance is a relative measure of the construct of firm performance. It commonly illustrates the perception of the firm's manager on the key indicators (e.g., development of new products, sales) in relation to the key competitors in the market (Dulger *et al*., 2014).

Even though the interest in the concept of firm performance is high within various research fields, there is still no universally agreed position in terms of the construct's unidimensionality and multidimensionality (Richard, Devinney, Yip, and Johnson, 2009). Some researchers suggest that it is necessary to investigate firm performance through the combination of various dimensions, integrating financial, organizational, and competitive measures for overall analysis (Santos and Brito, 2012). However, many studies adopt the unidimensional approach and measure firm performance by using a single dimension of the construct thus acknowledging that other dimensions exist as well (Glick, Wasburn, and Miller, 2005). In this thesis, the measure of competitive firm performance is adopted due to several reasons. Firstly, this choice answers the suggestions in scholarly literature regarding the relationships between firm level learning and firm performance and between firm level entrepreneurship and firm performance in order to investigate further established relations in the perspective of the non-financial measures of firm performance (Dulger *et al*., 2014; Martin-Rojas, García-Morales, and Bolívar-Ramos, 2013). Secondly, it is believed that managers are more willing to answer questions related to comparing themselves to competitors as more difficulties are found when trying to obtain accurate financial data on firm performance.

1.4. Relationship of learning behaviour, entrepreneurial orientation and firm performance

Having analysed the key concepts of this thesis separately in the previous sections, further discussion focuses on the ways how these concepts relate to each other. Therefore, this part of the thesis is directed towards the analysis of the relationships among the learning behaviour, the entrepreneurial orientation of the established firm, and the firm performance results within the relevant scientific literature. The outcomes of this analysis consequently lead to the development of the conceptual model.

1.4.1. Impact of learning on firm performance

Since the early development of the concept of organizational learning in 1960s, researchers have proposed and later empirically tested the impact that learning at the organizational level has on firm performance and competitive advantage (Inkpen and Crossan, 1995; Lei *et al*., 1999; Jiang and Li, 2008; Santos-Vinjande *et al*., 2012). Firm level learning was always closely linked with other substantial processes within organizations and theories explaining organizational behaviour, strategic development, and change. The traditional models of learning at the firm level were mainly seen as an adaptive mechanism to detect errors through an individual employee's behavioural and cognitive changes (Argyris and Schon, 1996; Antonacopoulou *et al*., 2005), whereas later approaches emphasised dynamism and suggested that learning is intertwined with organising. Learning in this case is seen as the process of gaining the required information for the firm and developing from it the firm-specific knowledge (Franco and Haase, 2009). It is established in research literature that learning is a fundamental mechanism within a firm (Schuler and Jackson, 2007) which enforces firms to interact with their environment (Edmondson and Moingeon, 1998), to deal with information and knowledge (Fiol and Lyles, 1985; Jerez-Gomez *et al*., 2005), to adapt to the changing conditions (Kuchinke, 1995; Edmondson and Moingeon, 1998; Jerez-Gomez *et al*., 2005).

Prior studies on the firm level learning acknowledged that learning at the firm level plays a crucial role in achieving high firm performance results through establishing a learning organization (Elinger et al., 2002) and enhancements of organizational learning capability (Goh *et al*., 2012; Jerez-Gomez *et al*., 2005; Chiva *et al*., 2007). Research literature provides extensive empirical evidence that learning in its various forms has an impact on the firm performance (Fiol and Lyles, 1985; Lei *et al*., 1999; Frank, Kessler, Mitterer, and Weismeier-Sammer, 2012; Dulger, Alpay, Yilmaz, and Bodur, 2014). Prior studies suggest that firm level learning positively affects the financial results of the firm (Lei *et al.* 1999) as well as non-financial results, such as innovation capabilities or productivity improvement (Leonard-Barton, 1992). Moreover, as argued by March (1991), learning at the organizational level might be treated as one of the principal components in any efforts to increase the firm performance.

Furthermore, as argued by Jiang and Li (2008), it is difficult to state that firm level learning could affect the firm performance and the overall competitive advantage equally under all circumstances. Santos-Vinjande *et al*. (2012) took it further and proposed that due to the virtue of being a strategic capability, learning at the organizational level contributes to the effective implementation of competitive strategies. The evidence from this study suggests that learning at the firm level is the base for strategic flexibility, which, in turn, with the help of continuous regeneration of new knowledge and learning from experience, enhances creativity and results in the greater firm performance and competitive advantage. Learning within the firm might in fact act as a forerunner of a firm to recognise and exploit new opportunities and, in turn, improve the firm performance. These findings come in line with an earlier study of Kamaya, Ntayi, and Ahiauzu (2011) who confirmed that interaction between the organizational level learning, knowledge management, and innovation creates

competitive advantage for the firm. Therefore, it might be argued that learning at the organizational level might affect the firm's performance by enabling the firm to adopt the entrepreneurial strategy and, consequently, to innovate.

Empirical studies also provided some evidence that learning from past experience impacts the current performance of the firm (Helfat, 1994; Madsen and Desai, 2010) as it helps to build new competences and enrich new routines (Lages, Jap, and Griffith, 2008). Learning from experience acts as the ability of the firm to perform behavioural actions to absorb and accumulate knowledge and skill portfolios from its past experience (Emden, Yaprak, and Cavusgil, 2005). This results in the fact that the experience gained from prior learning activities is able to affect the current behaviour and performance within the firm (Lages *et al*., 2008; Chung *et al*., 2019).

Moreover, the outcomes of experimental learning are found to be strongly associated with the innovation performance of the firm and the development of new products, services or processes. Experimentation-based learning activities are found to take place mainly inside the firm and develop firm-specific new knowledge (Lei *et al*., 1996). Thus, the willingness of the firm to experiment and its openness to risk is seen as one of the major facilitators of learning activities within the firm (Nemeth, 1997; Pedler, Burgoyne, Boydell, 1997; Chiva *et al*., 2007).

Upon acknowledging the confirmation within research literature (Fiol and Lyles, 1985; Lei *et al*., 1999; Frank *et al*., 2012; Dulger *et al*., 2014, etc.) of the impact of learning on the firm performance results, Chou and Ramser (2019) proposed that learning within the firm might be perceived as the process whose purpose is to improve the performance of the firm. Therefore, it is evident that learning at the organisational setting and its associated behaviours belong to the central elements in any efforts to increase various forms of the firm performance results. However, there is still the urge to empirically test and validate the relationship between the learning behaviour and the outcomes of the firm performance. It is suggested that particular attention should be paid to testing the learning effect(s) on the perceived measures of the firm performance including competitive firm performance (Argote and Miron-Spektor, 2011; Zhou *et al*., 2015; Simonin, 2017). Another stream of research suggests exploring the indirect approaches towards testing the relationship between organizational learning and firm performance (Lages *et al*., 2008; Altinay, Madanoglu, De Vita, Arasli, and Ekinci, 2016; Zhu *et al*., 2019). Such an approach would allow building the complete picture on how different actions and strategic choices within organizations jointly impact the outcomes of the firm.

1.4.2. Impact of entrepreneurial orientation on firm performance

Researchers within the field of firm level entrepreneurship suggest that the entrepreneurial orientation of the firm is linked to its performance (Lumpkin and Dess, 1996; Peng, 2008; Rauch, Wiklund, Lumpkin, and Frese, 2009; Harms, 2013). The increased competition creates conditions for firms to use entrepreneurial strategies allowing identification of opportunities as well as a better use of resources, which leads to greater performance results. This results in the development of understanding that entrepreneurial activities within the firm delivers greater possibilities to make

greater profits, survive through uncertain periods, and build the capacity to grow (Antonic and Prodan, 2008).

Since the early developments of the concept of entrepreneurial orientation, researchers have been interested not only in the conceptualization and dimensionality issues of the construct, but also great emphasis was placed on the investigation of the effects that the construct has on the firm performance outcomes. Covin and Slevin (1991) suggest that the phenomenon of entrepreneurial orientation received great attention from the strategy scholars because of "the belief that such activity can lead to improved performance in established organizations" (p. 19).

Since then, various researchers have confirmed the positive effect of entrepreneurship within an existing firm on various forms of firm performance:

- financial performance of a firm (Zahra, 1993; Kuratko, Ireland, Covin, and Hornsby, 2005; Zahra and Covin, 1995; Antonic and Prodan, 2008, Luo, Huang, and Wang, 2012);
- subjective performance of a firm (Peng, 2008; Martin-Rojas, García-Morales, and Bolívar-Ramos, 2013);
- non-financial performance of a firm (Fis and Cetindamar, 2009; Keh, Nguyen, and Ng, 2007).

This resulted in proposing that entrepreneurial activities within established firms are antecedents of firm performance and are associated with the firm's ability to survive and grow (Covin and Slevin, 1991; Zahra, 2008).

A review of previous studies investigating the relationship between the entrepreneurial orientation and the firm performance indicates that some researchers were interested in establishing the relationship between the firm performance and various dimensions of entrepreneurial orientation within an established organization (Peng, 2008), as well as the relationship between the firm performance and various entrepreneurial activities within the firm: corporate venturing, innovation, as well as strategic renewal (Zahra, 1993). Harms (2013) explains that, on the abstract level, the link between the entrepreneurial orientation of an established organization and the firm performance may be interpreted through the idea that the firm level entrepreneurship is a dynamic capability of the firm which leads to valuable, rare, and inimitable resource combinations. Therefore, the organization is able to increase the overall firm performance and to gain competitive advantage if it is entrepreneurially oriented.

However, there is lack of empirical justification for the respective relationship. Moreover, as stressed by Lumpkin and Dess (1996) and later by Harms (2013), entrepreneurial orientation does not act itself, but, actually, it rather provides a framework for action. Building on this notion, researchers suggest that there is evident need for future research to show how firms develop effective structures and processes which trigger entrepreneurship within firms (Dess *et al*., 2003) and which organizational structures and processes influence the longevity of various organizational forms of the firm level entrepreneurship (Phan, Wright, Ucbasaran, and Tan, 2009). Some studies also proposed the idea that firm level entrepreneurship acts together along with other processes within the enterprise while increasing

performance results (Zahra, 1993; Peng, 2008; Wang, 2008; Jiao, Wei, and Cui, 2010).

1.4.3. Learning and entrepreneurial orientation of the firm

In the light this thesis, learning activities within the firm together with the entrepreneurial orientation of an established firm are considered as having a positive effect on the firm performance. By taking both of these concepts as a joint effort aimed at improving the firm performance in the context of the evidence presented in research literature, we determine that the firm level entrepreneurship is linked with the other concepts of the field of management (Zahra, Nielsen, and Bogner, 1999; Antonic and Hisrich, 2004; Villiers-Scheepers, 2012), including organizational level learning. Analysis of research literature revealed that learning activities at the firm level and entrepreneurial orientation are two interdependent processes. Entrepreneurial activities within the firm are found to require learning in order to be successful at opportunity exploration (Villiers-Scheepers, 2012) and pursuit of innovativeness (Antonic and Hisrich, 2004). Previous studies suggest that learning at the firm level is the antecedent to entrepreneurial activities within the firm (Zahra *et al*., 1999; Martin-Rojas *et al*., 2011; Belousova and Gailly, 2013). However, Zahra *et al*. (1999) acknowledge that entrepreneurial activities within an established firm might not only be influenced by the firm level learning, but these activities may also influence the learning itself. Later, the dyadic effect between the firm level learning and the entrepreneurial orientation was confirmed by Haase, Franco and Félix (2015). Researchers confirmed that firm level learning behaviours enhance the entrepreneurial orientation. However, at the same time, entrepreneurial behaviours within the firm enable knowledge and information distribution and create conditions for learning activities. This explains why some of the researchers position learning as an intermediate concept while explaining the relationship between the entrepreneurial orientation and the outcome of the firm performance. On the other hand, other scholars suggest that the entrepreneurial orientation could explain the relationship between learning behaviours within the firm and the results of the firm performance, or it could also influence the strength of such a relationship.

There are a number of studies investigating learning activities within the firm as a way to explain how entrepreneurial activities within the firm affect the results of the firm performance. The results of these studies suggest that organizational level learning does mediate the relationship between the firm level entrepreneurship and the outcomes of the firm performance (Lin *et al*., 2008; Wang, 2008). However, some of the studies found only partial mediation of organizational level learning in the aforementioned relationship (Jiao *et al*., 2010; Rhee, Park, and Lee, 2010; Soares and Perin, 2020). This leads to some inconsistency of the results on the investigation of such relationships.

Only a few attempts within research literature might be identified in the field of examining the role of the entrepreneurial orientation of an established firm in the relationship between organizational level learning and the firm performance. Wolff, Pett and Ring (2015) investigated how the relationship between the learning orientation and the firm growth might be affected by the entrepreneurial orientation

of the firm. The empirical findings of this study suggest that the entrepreneurial orientation does mediate the relationship between the learning orientation and the firm growth. Therefore, the entrepreneurial orientation does act as the transition element between the firm's intention to learn and the firm's growth. A recent study of Zhu *et al*. (2019) suggests that the entrepreneurial orientation may be perceived as the bridge in the relationship between learning within the firm and the results of the firm performance, especially in the constantly changing environment.

1.5. Conceptual model of the role of entrepreneurial orientation in the relationship between learning behaviour and firm performance

The analysis of scientific literature conducted in the previous subchapters of this thesis leads to the development of a conceptual model where relationships between all the analysed concepts are demonstrated (see Figure 3).

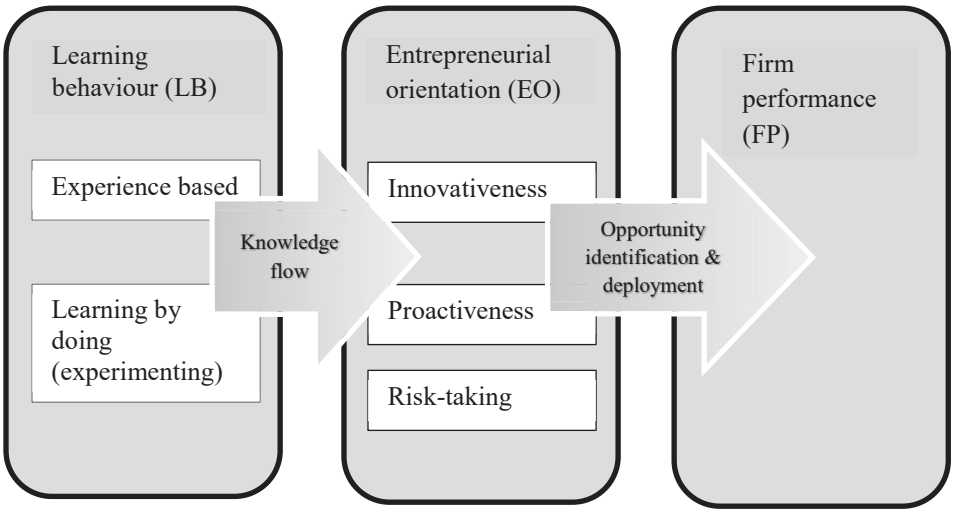

Figure 3. Conceptual model
(developed by the author)

Researchers have so far proven a positive association of the entrepreneurial orientation and learning within the firm (Elinger *et al*., 2002; Kamaya *et al*., 2011; Goh *et al*., 2012; Chung *et al*., 2019, and others). Furthermore, entrepreneurial orientation was found to be an important measure of how firms use knowledge-based resources to discover and exploit new opportunities for the firm development (Martin-Rojas *et al*., 2011; Villiers-Scheepers, 2012; Belousova and Gailly, 2013; Haase *et al*., 2015, and others). On top of that, researchers suggest that the entrepreneurial orientation has a positive effect on various forms of the firm performance (Kuratko *et al*., 2005; Zahra, 2008; Luo *et al*., 2012; Harms, 2013, and others). Therefore, assumptions in this thesis are made that a combination of learning behaviours together with the entrepreneurial orientation of the firm may deliver more effective results of the firm performance. However, the current developments within the respective

research fields on the organizational level learning and the firm level entrepreneurship lead to uncertainty as to how these two constructs interact for increasing the performance results of a firm. It was suggested in the literature that the relationship between learning and the entrepreneurial orientation is dyadic (Haase *et al*., 2015). For this reason, it is difficult to identify the exact role of the entrepreneurial orientation within the relationship between learning within the firm and the firm performance outcomes. Recent attempts have suggested that the entrepreneurial orientation as the strategic orientation of the firm influences the strength of the relationship between learning and the firm performance (Santos-Vinjande *et al*., 2012). However, Wolff *et al*. (2015) found that the entrepreneurial orientation is the transition element between learning within the firm and the firm performance results. Thus, there is still lack of evidence confirming either the mediating role or the moderating role of the entrepreneurial orientation in the relationship between learning behaviours within the firm and the outcomes of the performance of a firm.

Together with the proposed relationships between the learning behaviour, the entrepreneurial orientation of an established firm and the firm performance, the model suggests that the knowledge flow and the successful identification as well as the deployment of opportunities logically connect the investigated concepts. Knowledge was found to be the outcome of learning activities (North and Kumpta, 2018; Pollok *et al*., 2019) which forms the conditions for the entrepreneurial orientation within the firm. Entrepreneurially oriented firms are argued to be able to successfully identify and deploy opportunities, which contributes to greater results of the firm performance.

The following section of this thesis presents the methodological approach towards the validation of the conceptual model, the employed research methods, and the analysis of the gathered empirical data.

2. RESEARCH METHODOLOGY

The research methodology involves various choices about the research sample, methods of data collection, and the form of data analysis (Silverman, 2005). Therefore, this chapter shall discuss the research philosophy and approach, present the research hypotheses and the conceptual model of the research, introduce the research design and data sampling and define the tools of data collection and statistical analysis.

2.1. Research philosophy and approach

Saunders *et al*. (2009) relate the term of research philosophy to the knowledge development process and to the nature of that knowledge. Research philosophy is a fundamental element in any research as it underpins the choice of the research strategy and the methods used in the study.

Four main research philosophies may be outlined: positivism, realism, interpretivism, and pragmatism. Positivism refers to the natural science and aims to produce credible data which may be generalised to the population (Verschuren and Doorewaard, 2010). Another philosophy following the scientific approach of knowledge development is realism. There are two forms of realism: direct realism and critical realism. Direct realism argues that whatever we feel through our sensors pictures the world directly, while critical realism proposes that whatever we experience is just the images of the real world but not the world directly (Saunders *et al*., 2009).

The third type of the philosophy that one may adopt in the research is interpretivism. The interpretivism philosophy emphasises the necessity for the researcher to understand the differences of social actors (Verschuren and Doorewaard, 2010). The term 'social actor' in this context is used as a metaphor of the theatre and suggests that, as humans, we all play our individual roles in our lives. The challenge in the interpretivism philosophy lies in the necessity for the researcher to understand the world of the research subjects through their point of view.

Finally, the pragmatism philosophy emphasises the need for any methodological explanations to be tested in the world of practice (Gill and Johnson, 1991). Pragmatism focuses on the question of particular research; therefore, it does not emphasise the usage of one particular method and instead uses all the available approaches to gain in-depth understanding of the problem (Creswell, 2009).

This study follows the traditions of positivism and realism. The application of the selected research methods was aimed at accessing 'the facts' about the behaviour and attitudes of the respondents; this way, the positivism tradition was followed (Silverman, 2005).

2.2. Research design

Research designs are drafted plans of procedures to be followed within the research which span the decisions from broad assumptions to detailed methods of data collection and analysis (Creswell, 2009). There are three main approaches to the types

of research designs: the qualitative approach, the quantitative approach, and the mixed methods approach (Verschuren and Doorewaard, 2010). Qualitative studies explore the understanding of the meanings that individuals or groups relate to the particular phenomena, while the quantitative research aims to test theories based on the possible relationships between different variables. The mixed methods approach is an approach combining the qualitative and quantitative types of research designs in order to gain overall greater results than in the cases of relying on either quantitative or qualitative research.

The decision to follow one or another approach towards the research design mainly depends on the aim and objectives of the specific research. *The aim of empirical research* within this thesis is to investigate the role of entrepreneurial orientation of the established firm in the relationship between the learning behaviour and the firm performance. In order to fulfil this aim, the overarching *research question* was developed: what is the role of the entrepreneurial orientation in the relationship between the learning behaviour and the firm performance. The research question involves two *sub-questions*:

1. What are the relationships among the learning behaviours, the entrepreneurial orientation, and the competitive firm performance? (*the quantitative approach*)
2. Why does the learning behaviour together with the entrepreneurial orientation of an established firm impact the results of the firm performance and how is the innovativeness of the business sector expressed within this context? (*the qualitative approach*)

Building on the formulated research question and sub-questions, it was decided to adopt the mixed methods research design for this study. The overall logic of the research is presented in Figure 4 below. The analysis of the already existing theoretical approaches to the key concepts of the learning behaviour, the entrepreneurial orientation and the firm performance resulted in the development of a conceptual model explaining the relationship between the learning behaviour, the entrepreneurial orientation, and the results of the firm performance (refer to Section 1.5., Figure 3). In order to depict the identified relationships and examine the reasons behind these relationships and the contextual influence of the business sector, the mixed method research design was adopted. The reasoning for this approach is grounded in the aim to firstly test the variables and relations between them while using a larger sample and then explaining more profoundly the findings of the quantitative approach by using a smaller sample and the qualitative approach. Therefore, the explanatory sequential mixed method design was chosen for this study. The explanatory sequential design is a two-phase approach where the quantitative method is used for the first phase of the research followed by the qualitative method in the second phase of this research. The aim of this design is to explain the results of the quantitative phase by using the qualitative phase (Creswell *et al*., 2003). This allows validity and reliability to be achieved by the use of the quantitative approach, and then explore subjective explanations of the investigated phenomenon through the qualitative approach (Jogulu and Pansiri, 2011). It is expected that the findings from the qualitative phase of the research will help to explain the findings of the quantitative phase of the research.

Furthermore, the application of the mixed methods research design within this study allows better support and greater understanding of the conceptual model presented in Section 1.5. of this thesis. The use of the quantitative and qualitative methods will subsequently allow enhancing the validity and reliability of the overall research. Furthermore, the usage of such a research design will allow deeper investigation of the research problem by re-examining the research questions by using the qualitative methods (Jogulu and Pansiri, 2011).

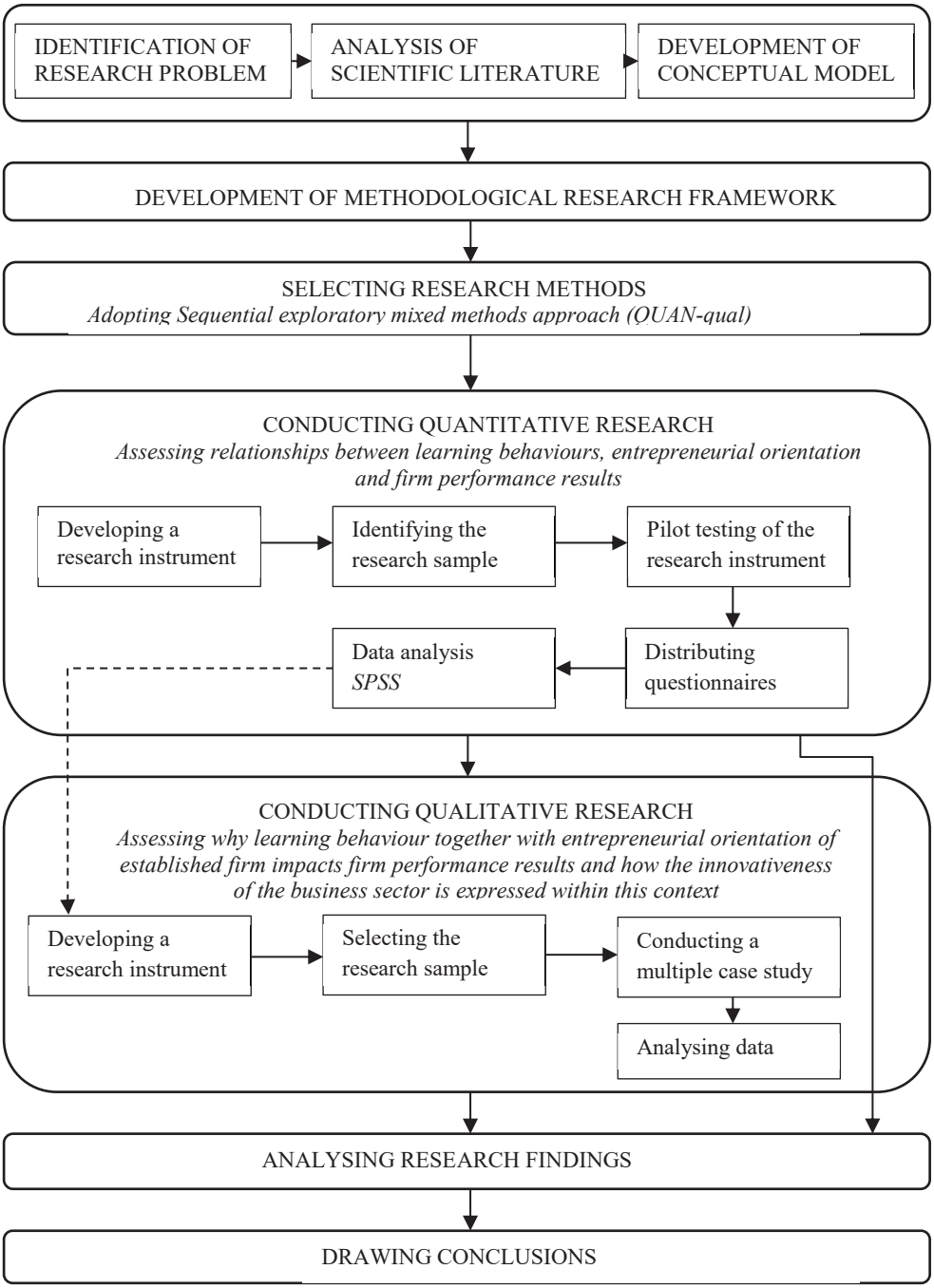

Figure 4. Research logic of the thesis
(developed by the author)

In order to answer the research question, the first research sub-question research model for the quantitative phase (see Figure 5) is built on the two main hypotheses derived from the analysis on scientific literature outlined in the previous sections of this thesis.

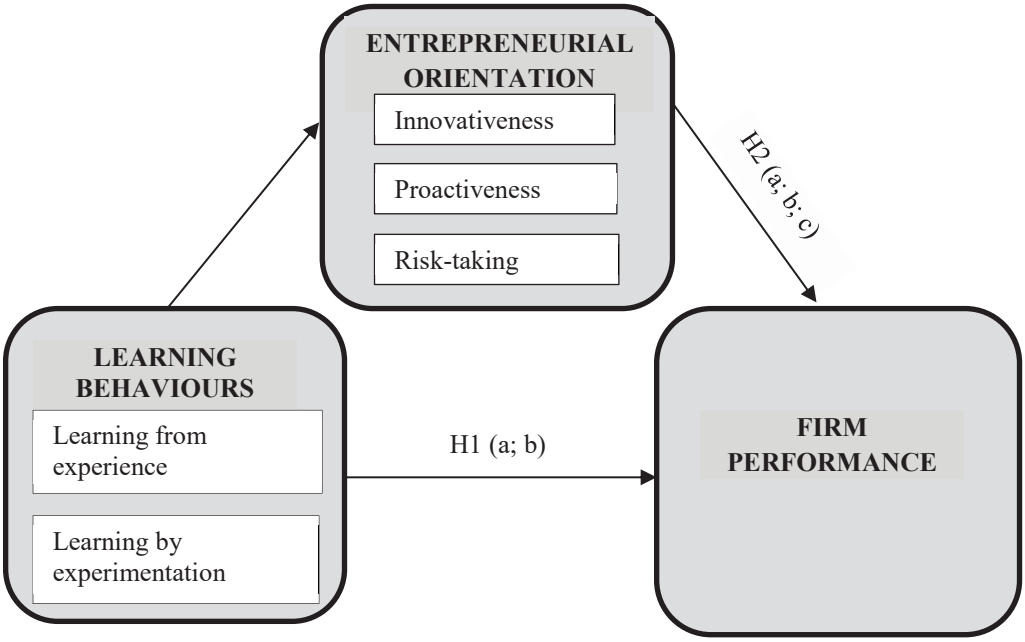

Figure 5. Research model for the quantitative phase
(developed by the author)

Firstly, it is assumed that the learning behaviour affects the results of the competitive performance of the firm. This assumption is built in accordance with the findings of previous studies which confirmed the positive links between learning within the firm and the firm performance outcomes (Inkpen and Crossan, 1995; Lei *et al*., 1999; Jiang and Li, 2008; Santos-Vinjande *et al*., 2012; Frank *et al*., 2012; Dulger *et al*., 2014). However, this stream of research still lacks studies investigating the relationship between the firm level learning activities and the firm performance in the context of small and medium enterprises (SMEs). Therefore, it is hypothesised that:

H1*: There exists direct positive relationship between the learning behaviour and the competitive firm performance.*

H1a*: There exists direct positive relationship between the learning from experience and the competitive firm performance.*

H1b*: There exists direct positive relationship between the learning from by experimentation and the competitive firm performance.*

Secondly, it is assumed that the entrepreneurial orientation of an established firm exerts effect on the relationship between the learning behaviour and the competitive performance of the firm by moderating or mediating it. Second

hypothesis is built on the findings of previous studies suggesting that the entrepreneurial orientation is a reflection of the way a firm uses its knowledge-based resources for the discovery of new opportunities for the firm and exploiting them (Zahra *et al*., 1999; Martin-Rojas *et al*., 2011; Belousova and Gailly, 2013). As a result of the research of the available literature providing evidence of the organizational level learning affecting the firm performance directly, it is hypothesised in this thesis that:

> ***H2****: Entrepreneurial orientation of an established firm mediates the effect that the learning behaviour has on the competitive performance of a firm.*
>
> > ***H2a****: Innovativeness mediates the effect that the learning behaviour has on the competitive performance of a firm.*
> >
> > ***H2b****: Proactiveness mediates the effect that the learning behaviour has on the competitive performance of a firm.*
> >
> > ***H2c****: Risk-taking mediates the effect that the learning behaviour has on the competitive performance of a firm.*

2.2.1. Research methods

The sequential mixed methods approach was applied for this research. Firstly, quantitative data gathering took place followed by qualitative data collection sequentially. The reasoning behind the use of this approach lies in the aim to firstly test the variables with a large sample and then to explore them in more depth by using the multiple cases approach. The mixed methods approach will help to enrich the gathered data and may provide more profound understanding on the topic. By incorporating both quantitative and qualitative data in the research, we shall achieve more rounded data interpretation and enable ourselves to check if the data interpretation makes sense by using various research methods (Anderson, 2008).

The questionnaire survey was used as the quantitative research method in order to depict the relationships among the learning behaviours within the firm, the entrepreneurial orientation of an established firm, and the competitive performance of the firm. This allowed achieving higher precision in measurement and the usage of well-established statistical methods for hypothesis testing as well as facilitating the comparison of the empirical findings. However, questionnaires allow the risk of missing data; it may be difficult to collect additional data, and a lower response rate may be obtained.

The multiple case study method was used to gather subjective explanations of individual experiences and interpretations of the findings of the quantitative research. It was expected that such an approach will allow making further interpretations of the statistical data and elaborating on the quantitative findings. Multiple case studies enable to check if the findings in one case are confirmed in the other cases, and it is likely to allow generalisations to be made from the collected data (Yin, 2003). The methods used for data gathering within the multiple case study phase included the desk research on the participating cases and semi-structured interviews. Semi-structured interviews were selected as this method allows unpacking the participant's thoughts, ideas and experiences. Moreover, it gives a greater flexibility in the asked questions and the given responses compared to the questionnaire because the

interview questions may be varied and changed depending on the circumstances which allow a greater opportunity to gather the necessary data in order to answer the research questions (Saunders *et al*., 2009). However, there are several limitations associated with the method of the semi-structured interview. One of the greatest limitations is based on the high risk of the bias. There are a few types of bias which need to be considered in the interview. Firstly, the interviewer bias may occur when non-verbal behaviour or comments of the interviewer influence the possible responses of the interviewee. In order to reduce this bias, the interview guide was prepared in advance, and key questions were identified. Secondly, the response bias is related to the interview method. The response bias may be caused by the time requirement in the interview process as well as by the nature of the interviewee when there is no great willingness to participate in the research (Saunders *et al*., 2009). For this reason, the interviews took place at the respondents' workplace thus allowing more comfort for the respondent and reducing the travelling time to and from the interview place.

2.2.2. Development of instruments

This section presents an overview of the measures used to investigate learning within the firms, their entrepreneurial orientation, and the results of the firm performance. The section concludes with the presentation of the measures which are used to investigate the relationships between the learning behaviour, the entrepreneurial orientation, and the firm performance.

2.2.2.1. Measuring learning behaviours within the firm

Research literature suggests different approaches towards measuring the organizational level learning within the firms. The overview of the key approaches to measuring the learning within an organization is provided in Table 7 below.

Table 7. Key approaches towards measuring learning within an organization (developed by the author)

Authors	***Approaches to measurement***	***Dimensions measured***	***Measurement items***
Chiva *et al*. (2007)	Measuring learning capability	Willingness to experiment	– "People here receive support and encouragement when presenting new ideas"; – "Initiative often receives a favourable response here, so people feel encouraged to generate new ideas."
		Openness to risk	– "People are encouraged to take risks in this organisation"; – "People here often venture into an unknown territory."

Authors	*Approaches to measurement*	*Dimensions measured*	*Measurement items*
		Interaction with environment	– "It is part of the work of all staff to collect, bring back, and report information about what is going on outside the company"; – "There are systems and procedures for receiving, collating and sharing information from outside the company"; – "People are encouraged to interact with the environment: competitors, customers, technological institutes, universities, suppliers, etc."
		Internal communication	– "Employees are encouraged to communicate"; – "There is free and open communication within my work group"; – "Managers facilitate communication"; – "Cross-functional teamwork is a common practice here."
		Participation in the decision making process	– "Managers in this organisation frequently involve employees in important decisions"; – "Policies are significantly influenced by the view of the employees"; – "People feel involved in main company decisions."
Martinez-Leon and Martinez (2010)	Measuring learning process	Information acquisition	– "Cooperation agreements with other companies, universities and technological centres"; – "Relationships with expert technicians and professionals"; – "Organization encourages its employees to join formal or informal networks made up of people from outside the organization"; – "Employees regularly attend fairs and exhibitions"; – "Development of a consolidated and resourceful R&D policy"; – "New ideas and approaches on work performance are experimented continuously"; – "Innovation is supported by organizational systems and procedures."
		Information distribution	– "All members are informed about the aims of the company";

Authors	*Approaches to measurement*	*Dimensions measured*	*Measurement items*
			– "Meetings are held periodically to inform all the employees about the latest innovations in the company"; – "The company has formal mechanisms to guarantee sharing of best practices among the different activity fields"; – "Individuals take part in several teams or divisions and also act as links between them, within the organization"; – "There are individuals responsible for collecting, assembling and distributing employees' suggestions internally."
		Shared interpretation	– "All members of the organization share the same aim to which they feel committed"; – "Teamwork is a very common practice in the company"; – "The company is able to rid itself of obsolete knowledge and seek new alternatives"; – "The company develops internal rotation programmes so as to facilitate the movement of employees from one department or function to another"; – "The company offers other opportunities to learn (visits to other parts of the organization, internal training, programmes, etc.) so as to make individuals aware of other people's or departments' duties."
		Organizational memory	– "The company has directories or emails filed according to the field they belong to, so as to find an expert on a concrete issue at any time"; – "The codification and knowledge administration system makes work easier for the employees"; – "The company has databases to stockpile its experience and knowledge so as to be able to use them later on."
Argyris and Schon (1996)	Measuring levels of organizational learning	Single loop learning Double loop learning	– "how members of the organization respond to the changes in the environment"; – "how learning within the organization occurs"; – "what is the aim of learning within organization."

Authors	*Approaches to measurement*	*Dimensions measured*	*Measurement items*
Watkins and Marsick (1997)	Measuring learning organization	Continuous learning	– "Opportunities for ongoing education and growth are provided"; – "Learning is incorporated into work so that people can learn on the job."
		Inquiry and dialogue	– "The organizational culture supports questioning, feedback, and experimentation"; – "People gain productive reasoning skills to express their views and the capacity to listen and inquire into the views of others."
		Team learning	– "Work is designed to use teams to access different modes of thinking"; – "Collaboration is valued by the culture and rewarded"; – "Teams are expected to learn by working together."
		Embedded system	– "Necessary systems to share learning are created, maintained, and integrated with work"; – "Employees have access to these high- and low-technology systems."
		Empowerment	– "People are involved in setting and implementing a shared vision"; – "Responsibility is distributed so that people are motivated to learn what they are held accountable to do."
		System connection	– "The organization is linked to its communities"; – "People understand the overall environment and use information to adjust work practices"; – "People are helped to see the effect of their work on the entire organization."
		Strategic leadership	– "Leadership uses learning strategically for business results"; – "Leaders model, champion, and support learning."

Some authors are eager to capture the organization's propensity to learn. In such studies, learning is measured by determining the firm's learning capability (Chiva *et al*., 2007). Measures for the organizational learning capability are designed by using the main facilitators of the firm level learning: an organization's willingness to experiment (Nemeth, 1997; Pedler *et al*., 1997; Jerez-Gomez *et al*., 2005), its openness to risk (Chiva *et al*., 2007; Jerez-Gomez *et al*., 2005), its openness to the

environmental change (Popper and Lipshitz, 2000; Jerez-Gomez *et al*., 2005), and its storage of knowledge (Huber, 1991; Jerez-Gomez *et al*., 2005).

Other authors aim to measure the learning process within the firm (Martinez-Leon and Martinez, 2010; Martinez-Leon and Martinez-Garcia, 2011). By using this approach to the measurement of learning within the firm, four dimensions are addressed: internal and external information acquisition, information distribution, shared interpretation, and organizational memory.

The next stream of researchers built their measurement scales based on the levels of organizational level learning (Argyris and Schon, 1996; Fiol and Lyles, 1985; Garcia-Morales, Verdu-Jover and Llorens, 2009). By using this approach to measure the learning activities within the firm, bipolar items are used which help to determine the level of learning (single-loop or double-loop) encouraged within that particular firm. The lowest value within such a scale indicates single-loop learning, while the highest value within the scale indicates double-loop learning. Items within such a measure are concerned with:

- how members of the organization respond to the changes in the environment (1= by detecting the error and correcting it, we order to maintain the central characteristics of the organizational theory-in-use; 7= by also attempting to resolve incompatible organizational norms by setting new priorities and restructuring the norms);
- how learning within the organization occurs (1= improving the rudimentary associations among the behaviours and the results; 7= the use of heuristics, skills development and insights);
- what is the aim of learning within the organization (1= learning is the basis for the development of adaptive behaviours without major strategic or structural changes; 7= learning is the basis for the development of proactive behaviours implying radical adjustments, transformation, and modification of the strategy, structure and/or systems of the organization).

Finally, there is a vast stream of studies which built their measurements of the firm level learning based on the concept of a learning organization which focuses not exclusively on the organizational level learning itself but also emphasises the organizational context and conditions facilitating the learning process (Lloria and Moreno-Luzon, 2014). The learning organization is one of the ways to analyse the organizational context for the enhancement of the process of learning. An organization is perceived as a learning organization if it provides the conditions for individual and collective learning through knowledge acquisition, improvement and transfer (Leitch *et al*., 1996; Appelbaum and Reichart, 1998). The outcome of learning organization is the integration and modification of the organizational practices and behaviours of its members (Ellinger *et al*., 2002). Researchers argue that by adopting the strategies of a learning organization, companies should promote learning at all levels: individual, team, and organization. The results of such learning would be greater results of performance (Baker and Sikula, 1999; Slater and Narver, 1995).

Even though the approaches to measuring learning within an organization are different, they share some common features. For instance, the role of the external and

internal environment, the interaction with various organizational units and collaboration are emphasised in the measurement of the organizational learning capabilities, the learning process, the learning levels, and the learning organization.

2.2.2.2. Measurement of entrepreneurial orientation

Table 8 summarises some of the measures of the entrepreneurial orientation used in various studies.

Table 8. Items used to measure the entrepreneurial orientation (developed by the author)

Authors	*Dimensions measured*	*Measurement items*
Covin and Slevin (1989)	Innovation, risk-taking, proactiveness	1. "In general, the top managers of my firm favour: 1= strong emphasis on the marketing of tried and true products or services; 7= strong emphasis on R&D, technological leadership, and innovations"; 2. "How many new lines of products or services has your firm marketed in the past five years?"; 3. "How would you describe the nature of changes in the product or service? 1= mostly of minor nature; 7= usually quite dramatic"; 4. "In dealing with its competitors, my firm: 1= typically responds to actions; 7= typically initiates actions"; 5. "My firms is: 1= very seldom the first business to introduce new products/services; 7= is very often the first business to introduce new products/services"; 6. "My firm: 1= typically seeks to avoid competitive clashes; 7= typically adopts a very competitive nature"; 7. "In general, the top managers of my firm have: 1= strong proclivity for low-risk projects; 7= strong proclivity for high-risk projects"; 8. "In general, the top managers of my firm believe that: 1= owing to the nature of the environment, it is best to explore it gradually via timid, incremental behaviour; 7= owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives"; 9. "When confronted with decision-making situations involving uncertainty, my firm: 1= typically adopts a cautious, 'wait and see' posture; 7= typically adopts a bold, aggressive posture."
Zahra (1993)	Venturing, innovation, proactiveness	"1–5 Likert scale (1= low; 5= high): 1. New business creation; 2. Product innovation; 3. Percent of Revenue Generated from New Business; 4. Technological entrepreneurship;

Authors	*Dimensions measured*	*Measurement items*
		5. Mission Reformulation; 6. Reorganization.”
Smart and Conant (1994)	N/A	1. “Propensity to take risks”; 2. “Tendency to engage in strategic planning activities”; 3. “Ability to identify customer needs and wants”; 4. “Level of innovation”; 5. “Ability to persevere in making your vision of the business reality”; 6. Ability to identify new opportunities.”
Lee, Lee and Pennings (2001)	Innovativeness, proactiveness, risk-taking	“Innovativeness: 1. The number of R&D employees; 2. The number of products/services that created a new market niche, penetrated the established markets successfully, or significantly substituted imports from foreign countries. Risk-taking: 1. The number of risky R&D projects; 2. Expenditure on risky R&D projects. Proactiveness: 1. The number of first mover pursuing projects; 2. First mover pursuing project expenditure.”
Kemelgor (2002)	Innovativeness, proactiveness, risk-taking	Covin and Slevin (1986) scale
Jantunen *et al*. (2005)	Innovativeness, proactiveness, risk-taking	“(1= disagree completely; 7= agree completely) 1. We are among the first ones to implement progressive and innovative production processes and practices; 2. The management of our company supports the projects that are associated with risks and expectations for returns higher than average; 3. We actively observe and adopt the best practices in our sector; 4. We actively observe the new practices developed in other sectors and exploit them in our own business; 5. We recognise early such technological changes that may have an effect on our business; 6. We are able to take on unexpected opportunities; 7. We search for new practices all the time; 8. In uncertain decision making situations, we prefer bold actions as to make sure that possibilities are exploited; 9. We allocate our resources continuously to new promising areas of operation.”

Authors	*Dimensions measured*	*Measurement items*
Green *et al*. (2008)	Innovativeness, proactiveness, risk-taking	Covin and Slevin (1986) scale
Hansen *et al*. (2011)	Innovativeness, proactiveness, risk-taking	Covin and Slevin (1986) scale minus one risk-taking item
Fadda and Sorensen (2017)	Innovativeness, proactiveness, risk-taking, competitiveness, autonomy	"Covin and Slevin (1989) scale for innovativeness, proactiveness and risk-taking; George *et al*. (2001) scale for competitiveness; Lumpkin and Dess (1996) scale for autonomy."

It is evident that the measurement developed by Covin and Slevin (1986) is used to a great extent for the purpose to investigate the entrepreneurial orientation of already existing firms. This builds up for the greater validity and reliability of the scale. However, a few attempts may be noted in the analysis researching the incorporation of objective measures into the scale development. For instance, Lee *et al*. (2001) used objective firm level data in order to assess the firm's capacity to be innovative (R&D employees, numbers of innovative projects, expenditure on risky R&D projects, etc.).

2.3.3.3. Measurement of firm performance

Previous studies mainly used a range of firm performance measures and avoided concentrating just on one particular measure. Moreover, many studies did not limit themselves to the use of merely financial indicators (Jimenez-Jimenez and Sanz-Valle, 2010).

One of the most widely used practices while measuring the firm performance within the management research is to pose questions to managers about the firm performance in itself and in comparison with their competitors (Steensma and Corley, 2000; Garcia-Morales, Verdu-Jover, Llorens, 2009). Table 9 overviews a variety of measures used to capture the firm performance in relation to the learning behaviour and the entrepreneurial orientation of an already established firm.

Table 9. Measurements of firm performance
(developed by the author)

Authors	*Dimensions measured*	*Measurement items*
Murray (2003)	– Short-term performance – Long-term performance	N/A
Yeo (2003)	– Financial – Budgetary	– "Bottom-line, performance targets, turnover;

Authors	*Dimensions measured*	*Measurement items*
	– Use of assets – Operational – Markets – Products and services – Human resources	– Productivity and efficiency, turnaround time, defect rate; – Public image and perception of an organization; – Employee attrition; – Employee satisfaction; – Skills levels of employees; – Management of resources; – Customer satisfaction; – Creative and innovative products and services."
Garcia-Morales, Verdu-Jover, Llorens (2009)	– Manager's subjective perceptions in regards to firm performance – Objective data on firm performance	"(1= totally disagree; 7= totally agree) – In the past three years: the organization has obtained high performance measured by return over assets; the organization has obtained high performance measured by return over own resources; the organization has obtained high performance measured by return over sales; the organization has obtained high sales growth in the main products/services and markets; – In relation to your main competitors, in the last three years: the organization has obtained performance measured by return over assets higher than that of competitors; the organization has obtained performance measured by return over own resources higher than that of competitors; – The organization has obtained performance measured by return over sales higher than that of competitors; the organization has obtained high sales growth in the main products/services and markets higher than that of competitors."
Kamaya, Ntayi and Ahiauzu (2011)	Financial performance	– "The financial position of my organization has improved over the last three years; – Over the last three years, the profits of our organization have increased; – The revenue of our organization has increased over the last three years; – The revenues of our company have increased over the last three years; – The return on investment of our organization has improved over the last three years."
Goh *et al*. (2012)	– Financial performance measures – Competitive performance measures	"Financial performance measures: – Subjective ratings of profitability; – Profit growth; – Sales growth; – Return on Investment (ROI); – ROE. Competitive performance measures:

Authors	*Dimensions measured*	*Measurement items*
	– Non-financial performance measures	– Perceptual ratings of relative performance against competitors. Non-financial performance measures: – Innovation; – Efficiency; – Job satisfaction; – Other.”
Wu and Chen (2014)	– Operational excellence – Customer intimacy – Product leadership – Financial achievement	Adapted from Kaplan and Norton (2001) and Rai *et al*. (2006)
Gupta *et al*. (2014)	– Financial firm performance	– Return on Assets (ROA).
Zhou *et al*. (2015)	– Perceptual innovation measures – Objective performance measures	– 3 year average Return on Assets (ROA); – Perceptual innovation capability scale.

Due to difficulties in accessing the financial data of the investigated firms and suggestions from previous studies, this thesis focuses on the competitive firm performance as a measure to represent the construct of firm performance. Previous studies demonstrated that a large share of respondents are not willing to provide accurate financial data on the firm performance and that respondents often feel more open to discuss the firm performance in relation to their biggest competitors.

2.3.3.4. Composition of the survey instrument

A questionnaire was developed for the quantitative part of the research. The pilot version of the questionnaire was tested on 30 firms. This allowed understanding whether the instrument adequately reflects the topic (DeVellis, 2003). Pilot testing started with 24 closed-ended questions and resulted in 5 problematic questions getting removed.

The main structural part of the questionnaire includes 18 closed-ended questions. For these closed-ended questions, the respondents were asked to respond on a ten-point Likert-type scale. Also, an option to choose “I do not know/cannot answer” was included.

Table 10 describes the constructs of the study indicators and presents the questions of the survey to disclose the items.

Table 10. Survey development
(developed by the author)

Second order dimension	***First order dimension***	***Question***	***Authors***
Learning behaviours within the firm	Learning from experience	Enterprise has an annual plan of employee education and training (ol1_1)	Nemeth, 1997; Pedler *et al*., 1997; Jerez-Gomez *et al*., 2010
		Enterprise perceives failure of the project as an opportunity for learning and improvement (ol1_2)	
		There is a database (or other tools) for storing the needed information and experience (ol1_3)	
		Enterprise considers permanent learning (in various forms) as an important component of its work activities (ol1_4)	
	Learning by experimentation	The environment's changes are hardly predictable in our industrial sector (ol2_1)	
		Enterprise encourages employees to experiment and try different ways of learning (ol2_2)	
		In order to reduce the risks of innovative projects, the enterprise encourages to learn from previous experience (ol2_3)	
		Enterprise gives opportunities to use new knowledge and abilities (ol2_4)	
Entrepreneurial orientation of established firm	Innovativeness	Enterprise dedicates resources and funds to support innovation projects (rri1_3)	Adopted from Covin and Slevin (1991)
		Enterprise invests in research & development (rri1_4)	
	Proactiveness	Enterprise orients itself towards high finance value projects even if they are risky (oi2_1)	

Second order dimension	*First order dimension*	*Question*	*Authors*
		Enterprise takes bold strokes when looking for new opportunities (oi2_2)	
		Enterprise is looking for new and original ideas (oi2_3)	
	Risk-taking	Employees are encouraged to take calculated risks while implementing innovative ideas (rri3_2)	
		Enterprise funds experimental projects despite realising that some of them will undoubtedly fail (rri1_5)	
Firm performance	Manager's subjective perceptions in regards to firm performance in relation to main competitors	Sales of our enterprise rise faster than the sales of our competitors (p1_3)	Adopted from Garcia-Morales, Verdu-Jover, Llorens (2009)
		Our enterprise creates more products/services per year than our competitors (p2_1)	
		The new products/services of our enterprise have better evaluation than the new products/services of our competitors (p2_2)	

It is assumed within this research that a firm's operating environment which is reflected through the business sector where the firm operates influences the effect of the entrepreneurial orientation of an already established firm on the relationship between the learning behaviour and the competitive performance of the firm. Therefore, it is controlled within the study for the business sector and the firm size.

2.3.3.5. Composition of the interview instrument

In order to collect qualitative data for the analysis of multiple cases, the structured interview method was selected. The interview questions were based on a prior quantitative survey and were derived from validated scales. This allowed comparability of the gathered data. The interview protocol consisted of 11 standardised open questions (see Table 10).

Table 11. Development of the interview instrument
(developed by the author)

Second order dimension	***First order dimension***	***Question***	***Authors***
Learning behaviours within the firm	Learning from experience	How does your company keep and transmit positive and negative activity experience?	Nemeth, 1997; Pedler *et al*., 1997; Jerez-Gomez *et al*., 2010)
		Does your company have annual training plans for employees? (Is the employee able to choose what to learn?)	
	Learning by experimentation	How does your company apply newly acquired knowledge of employees for the development of the company? Give examples.	
Entrepreneurial orientation of an established firm	Innovativeness	Does the company spend part of the budget for the development of innovative projects? How big is the proportion? Why not?	Adopted from Covin and Slevin (1991)
		Does the company spend part of the budget for research & development? How big is the proportion? Why not?	
	Proactiveness	Does the company regularly follow and analyse the latest tendencies in technological development? (Why is it important?; What kind of information is important for business success?)	
		Do employees regularly suggest the development of innovative services/product(s)? What motivates employees to regularly develop innovative ideas?	
	Risk-taking	Do you personally/your manager tolerate risky projects? What are the reasons for that?	
Firm performance	Manager's subjective perceptions with	Do the sales of your company increase faster than the sales of your competitors?	Adopted from Garcia-Morales,

Second order dimension	*First order dimension*	*Question*	*Authors*
	regard to the firm performance in relation to its main competitors	Does your company introduce to the market more products/services than your competitors?	Verdu-Jover, Llorens (2009)

In addition to the standardised questions, interviewees were asked to elaborate on the reasoning, provide examples of certain activities, and present their personal view-point.

2.3. Strategy of research sampling

The aim of this research is to identify and test the relationships among the learning behaviours within the firm, the entrepreneurial orientation of the established firm, and the competitive performance of the firm. It is assumed within this study that the impact that learning behaviours have on the firm performance may be affected by the entrepreneurial orientation of the firm. In order to investigate this assumption, the entire sample was surveyed with the response rate of 6.6%. Thus, the research sample consisted of 410 firms from innovative and non-innovative sectors within Lithuania which were selected for the quantitative part of the research. Table 12 depicts the sample structure of the survey.

Table 12. Sample structure of the quantitative research (developed by the author)

	Sample n=410	*Sample %*
Business sector		
Information and communication (J)	**163**	**39.76**
Manufacture of food products (C10)	**85**	**20.73**
Manufacture of wood and of products of wood (C16)	**85**	**20.73**
Financial and insurance activities (K)	**32**	**7.80**
Electricity, gas, steam and air conditioning supply (D)	**32**	**7.80**
Manufacture of computer, electronic and optical products (C26)	**10**	**2.44**
Manufacture of pharmaceutical products and preparations (C21)	**3**	**0.74**
Size of the firm		
1–5 employees	**236**	**57.56**
6–10 employees	**67**	**16.34**
11–250 employees	**104**	**25.37**
< 250 employees	**3**	**0.73**
Level of innovativeness		
Innovative firms	**240**	**58.54**
Non-innovative firms	**170**	**41.46**
Position in the firm		
Director, owner	**383**	**93.41**
Deputy manager, regional manager, commercial manager, etc.	**15**	**3.66**
Refused to answer	**12**	**2.93**

The need to reach both innovative and non-innovative sectors was raised due to the nature of the phenomenon of entrepreneurial orientation where main focus is placed on the dimension of innovativeness. This led to the assumption that firms operating in innovative business sectors would facilitate the innovativeness, risk-taking, and proactiveness dimensions of the entrepreneurial orientation more frequently than the firms operating in non-innovative business sectors. Therefore, the innovativeness of a business sector is perceived as one of the key criteria when selecting the samples for both quantitative and qualitative research.

In order to achieve method triangulation, the sample for the qualitative part of the research was derived from the sample used for the quantitative survey.

Table 13 illustrates the composition of the research sample used for the qualitative part of the research.

Table 13. Sample structure of the qualitative research
(developed by the author)

	Sample n=12
Business sector	
Information and communication (J)	**2**
Manufacture of food products (C10)	**3**
Manufacture of wood and of products of wood (C16)	**3**
Financial and insurance activities (K)	**2**
Manufacture of pharmaceutical products and preparations (C21)	**2**
Size of the firm	
1–5 employees	**1**
6–10 employees	**0**
11–250 employees	**11**
Level of innovativeness	
Innovative firms	**6**
Non-innovative firms	**6**

The firms for the samples of quantitative and qualitative research were selected based on the following criteria:

- BERD (Business Enterprise Research and Development) results;
- the number of new products or services per year;
- the percentage of exports in the organization's total annual turnover.

The respondents of the survey were mainly the directors or owners of the surveyed firms or members of their management teams. This allowed ensuring that the respondents have the relevant expertise to answer questions related to the dimension of the competitive performance of the firm and the strategic decisions which are related to the learning activities and entrepreneurial orientation of the firm.

The detailed characteristics of the cases participating in the qualitative phase of the research are provided in Table 14 below.

Table 14. Characteristics of the cases participating in the multiple case study (developed by the author)

Case	*Innovativeness of the sector*	*Business sector*	*Number of employees*	*Number of respondents*	*Job positions of respondents*
Case A	Innovative	C21	95	2	Director; Head of the innovation unit
Case B	Innovative	C21	26	3	Director; Finance manager
Case C	Innovative	J	92	4	Senior manager; ICT analysts, HR Manager
Case D	Innovative	J	14	3	Owner; ICT developers
Case E	Innovative	K	36	4	Director; Finance Managers
Case F	Innovative	K	13	2	Director; Accounting Manager
Case G	Non-innovative	C16	30	2	Owner; Vice-director
Case H	Non-innovative	C16	250	4	Director; Head of manufacturing; Heads of departments
Case J	Non-innovative	C16	5	3	Director; Export & marketing director; HR Manager
Case K	Non-innovative	C10	86	3	Director; Export Manager; HR Manager
Case L	Non-innovative	C10	100	3	Director; Director of Commerce; Manager
Case M	Non-innovative	C10	44	2	Director; Technical Director

The respondents participating in semi-structured interviews and focus groups were mainly owners or top management level employees responsible for the key function within the studied organizations.

3. RESULTS OF EMPIRICAL RESEARCH

This part of the thesis presents the analysis of data collected by using mixed methods of the research design. The analysis starts with the results from the quantitative phase. Subsequently, the analysis of the gathered qualitative data is presented.

3.1. Results of the quantitative research

Empirical analysis of the data gathered from the quantitative phase of the research starts with the presentation of the main constructs and validity tests of these constructs. Later, this section presents descriptive statistics and the implemented statistical procedures for testing the hypotheses.

3.1.1. Validity and reliability of the constructs

In order to analyse the validity and reliability of the constructs employed within the quantitative survey, exploratory factor analysis (EFA) was performed. As all the measurement items were modified from the established scales, the exploration of the structure of constructs was performed at first to identify the items with high and low loadings on the relevant factors. For this purpose, the principal component method with Varimax rotation was applied, followed by confirmatory factor analysis (CFA) afterwards.

The results of EFA analysis revealed 5 factors with Eigenvalues higher than 1. However, after the verification of EFA results using CFA analysis, 6 factors were confirmed. The following sections present detailed results of both EFA and CFA analyses.

EFA analysis for the learning behaviour construct. EFA analysis of the learning behaviour construct revealed one factor with the Eigenvalue higher than 1. This proved that the construct of learning behaviour is unidimensional (item factorial weights 0.674–0.809). The items related with the planned learning activities and environment (ol1_1 and ol2_1) were removed due to low loadings. For the evaluation of the validity of internal consistency, Cronbach's alpha coefficients were calculated for the construct. They demonstrated a high level of internal consistency. The Cronbach's Alphas of the construct of the learning behaviour were above the recommended minimum standard of 0.60 (Baker *et al*., 2002).

Table 15. EFA for learning behaviour
(developed by the author)

Construct	*Measured item*	*Factorial weights*	*Cronbach's alpha*
Learning behaviour	ol1_2	.755	.853
	ol1_3	.674	
	ol1_4	.809	
	ol2_2	.733	
	ol2_3	.832	

Construct	*Measured item*	*Factorial weights*	*Cronbach's alpha*
	ol2_4	.797	

EFA analysis for the entrepreneurial orientation construct. EFA analysis of the construct of entrepreneurial behaviour revealed 3 factors with the Eigenvalue higher than 1. The first factor represents the innovativeness dimension of the entrepreneurial orientation (item factorial weights 0.664–0.879). The second factor reflects the proactiveness dimension of the entrepreneurial orientation (item factorial weights 0.791–0.860). The third factor reflects the risk taking dimension of the entrepreneurial orientation (item factorial weights 0.878–0.953). The Cronbach's alpha coefficients for innovativeness and proactiveness constructs demonstrated a high level of internal consistency (above the recommended minimum standard of 0.60). However, the construct of risk-taking demonstrated a Cronbach's alpha coefficient of only 0.565. Upon acknowledging that the coefficient may also be affected by the length of the test or even by the number of the items measured within the construct (Streiner, 2003), and by having in mind that the construct of risk-taking is well established in the literature on entrepreneurial orientation, the Cronbach's Alpha value around 0.6 is considered adequate.

Table 16. EFA for entrepreneurial orientation
(developed by the author)

Construct	*Measured item*	*Factorial weights*	*Cronbach's alpha*
Innovativeness	rri1_3	.664	.704
	rri1_4	.879	
Proactiveness	oi2_1	.791	.783
	oi2_2	.860	
	oi2_3	.800	
Risk-taking	rri3_2	.953	.565
	rri1_5	.878	

EFA analysis for the competitive performance of a firm construct. EFA analysis of the construct of competitive firm performance revealed one factor with the Eigenvalue higher than 1. Within the construct, items factorial weights between 0.831 and 0.876. Cronbach's alpha coefficient for the construct demonstrated a high level of internal consistency (above the recommended minimum standard of 0.60).

Table 17. EFA for the competitive performance of a firm
(developed by the author)

Construct	*Measured item*	*Factorial weights*	*Cronbach's alpha*
Competitive performance of a firm	p1_3	.863	.822
	p2_1	.876	
	p2_2	.831	

CFA analysis for first order constructs. The analysis of CFA confirmed 6 first order factors: learning from experience, learning by experimentation, innovativeness, proactiveness, risk-taking and competitive performance of the firm. The suggested factor-structure provided an appropriate fit with the data, i.e., $\chi 2$ / df = 3.293, p = 0.000; confirmatory fit index (CFI) = 0.929; root-mean-square error of approximation (RMSEA) = 0.075.

Table 18. CFA for first order constructs
(developed by the author)

Items <--- Constructs	*Estimate*	*S.E.*	*C.R.*	*P*
ol1_2 <--- Learning_from_experience	.724			
ol1_3 <--- Learning_from_experience	.660	.090	12.032	***
ol1_4 <--- Learning_from_experience	.810	.078	14.316	***
ol2_2 <--- Learning_by_experimenting	.669			
ol2_3 <--- Learning_by_experimenting	.887	.081	14.777	***
ol2_4 <--- Learning_by_experimenting	.834	.070	14.292	***
rri1_3 <--- Innovativeness	.693			
rri1_4 <--- Innovativeness	.792	.097	13.500	***
rri3_2 <--- Risk_taking	.403			
rri1_5 <--- Risk_taking	.670	.212	7.890	***
oi2_1 <--- Proactiveness	.628			
oi2_2 <--- Proactiveness	.819	.097	12.561	***
oi2_3 <--- Proactiveness	.835	.091	12.656	***
p1_3 <--- Competitive_firm_performance	.776			
p2_1 <--- Competitive_firm_performance	.794	.080	13.506	***
p2_2 <--- Competitive_firm_performance	.749	.069	12.989	***

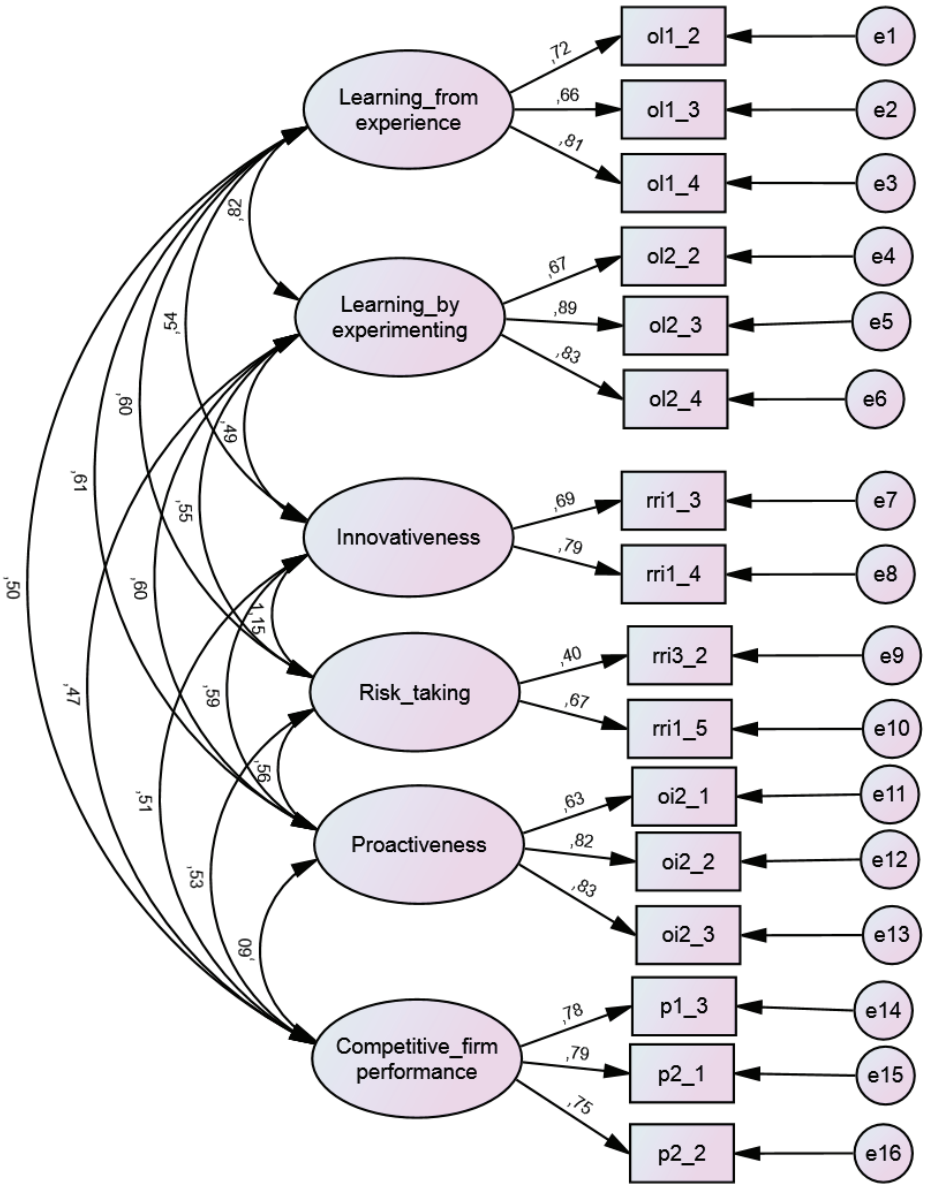

Figure 6. Graphical scheme of CFA for first order constructs
(developed by the author)

CFA analysis for second order constructs. Three second order constructs were confirmed through the second step of CFA analysis. The suggested higher order factor-structure provided an appropriate fit with the data, i.e., $\chi 2$ / df = 3.946, p = 0.000; confirmatory fit index (CFI) = 0.958; root-mean-square error of approximation (RMSEA) = 0.085.

Table 19. CFA for second order constructs
(developed by the author)

Items <--- Constructs	*Estimate*	*S.E*	*C.R*	*P*
LB_Experience <--- Learning_behaviour	.797			
LB_Experimenting <--- Learning_behaviour	.796	.067	12.859	***
EO_INN <--- Entrepreneurial_orientation	.753			
EO_R_T <--- Entrepreneurial_orientation	.746	.071	13.071	***
EO_PRO <--- Entrepreneurial_orientation	.651	.063	11.706	***
p1_3 <--- Competitive_firm_performance	.782			
p2_1 <--- Competitive_firm_performance	.795	.080	13.467	***
p2_2 <--- Competitive_firm_performance	.743	.069	12.908	***

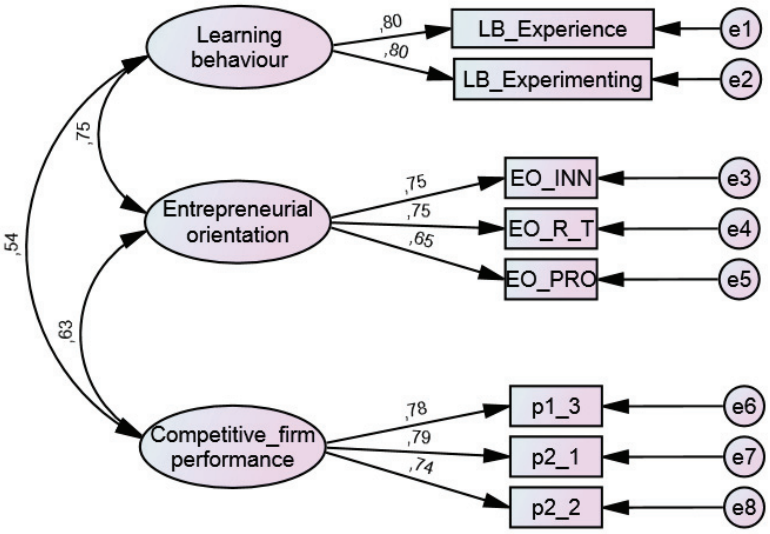

Figure 7. Graphical scheme of CFA for first order constructs
(developed by the author)

Following section presents the descriptive analysis of identified factors and correlation analysis for those factors.

3.1.2. Descriptive statistics and correlations analysis

Descriptive analysis of the gathered data was performed through identifications of the minimum and maximum values, means, and standard deviations. The results of the analysis are presented in Table 20 below.

Table 20. Descriptive statistics of identified constructs
(developed by the author)

Variable	*Minimum value*	*Maximum value*	*Mean*	*Standard deviation*
Learning from experience	1.00	10.00	7.0385	1.99701
Learning by experimenting	1.00	10.00	6.7598	2.03450
Innovativeness	1.00	10.00	4.9988	2.40136
Proactiveness	1.00	10.00	6.2512	2.05230
Risk-taking	1.00	10.00	4.5075	2.28718
Competitive firm performance	1.00	10.00	5.1185	2.20972
Firm size	1.00	582	17.83	48.512
Innovativeness of sector	0.00	1.00	0.585	0.4933

As all the accumulated variables (calculated as means of each factor – subscale) have no normal distribution (as shown by Kolmogorov-Smirnov test $p < 0.05$), a non-parametric test of Spearman rank correlation was used to measure the degree of association between the variables within the conceptual model (see Table 21).

Table 21. Spearman correlation test of identified constructs
(developed by the author)

	EO_INN	*EO_R_T*	*EO_PRO*	*EO_total*	*CFP*	*LB_experience*	*LB_experimenting*	*LB_total*
EO_Innovativeness (EO_INN)	1.000	.643**	.442**	.840**	.410**	.408**	.423**	.446**
EO_Risk-taking (EO_R_T)	.643**	1.000	.399**	.802**	.357**	.420**	.454**	.461**
EO_Proactiveness (EO_PRO)	.442**	.399**	1.000	.781**	.444**	.402**	.420**	.434**
EO total	.840**	.802**	.781**	1.000	.496**	.478**	.502**	.557**
Competitive firm performance (CFP)	.410**	.357**	.444**	.496**	1.000	.382**	.379**	.376**
LB_experience	.408**	.420**	.402**	.478**	.382**	1.000	.651**	.826**
LB_experimenting	.423**	.454**	.420**	.502**	.379**	.651**	1.000	.878**

	EO_IN N	*EO_R_ T*	*EO_PR O*	*EO_total*	*CFP*	*LB_ex perien ce*	*LB_ex perime nting*	*LB_tot al*
Learning behaviour (LB)	.446**	.461**	.434**	.557**	.376**	.826**	.878**	1.000

**p<0.01

Correlation analysis demonstrates that learning behaviour is significantly positively associated with the competitive performance of a firm (r= 0.376, p < 0.01). Moreover, learning behaviour is significantly positively correlated with the dimensions of innovativeness (r= 0.446, p<0.01), risk-taking (r= 0.461, p < 0.01), and proactiveness (r= 0.434, p<0.01), as well as with the overall construct of entrepreneurial orientation (r=0.557, p < 0.01). Entrepreneurial orientation was found to be significantly positively associated with the results of competitive firm performance (r= 0.496, p < 0.01). Correlations between the results of separate dimensions of entrepreneurial orientation and competitive firm performance were also found to be positive and significant (innovativeness r= 0.410, p < 0.01; risk-taking r= 0.357, p < 0.01; proactiveness r= 0.444, p < 0.01).

3.1.3. Multicollinearity and discriminant validity of the constructs

Multicollinearity. Multicollinearity is found to be an issue when high correlations are found between different independent variables. In order to check if multicollinearity is evident within the gathered data, the variance inflation factor (VIF) was calculated. VIF allows testing for the potential impact of collinearity by measuring the impact of collinearity within independent variables through the regression model. It has been established that a VIF value which is more than 4 signals potential multicollinearity issues. Results of the multicollinearity analysis are presented in Table 22 below.

Table 22. Results of multicollinearity analysis
(developed by the author)

Variable	*Tolerance*	*VIF*
Learning from experience	.642	1.513
Learning by experimenting	.636	1.527
Innovativeness	.543	1.842
Proactiveness	.662	1.511
Risk-taking	.566	1.767

The analysis of VIF demonstrates that the lowest VIF value for the analysed constructs is 1.511, whereas the highest VIF value is 1.842. Therefore, no multicollinearity issues are observed within the sample.

Discriminant validity and reliability. In order to test the constructs, discriminant validity average variance extracted (AVE) was performed (see Table 23 below).

Table 23. Validity and reliability of the constructs
(developed by the author)

Construct	*Composite reliability (CR)*	*Average variance extracted (AVE)*
Learning from experience	0.8862	0.5908
Learning by experimenting	0.8713	0.5913
Innovativeness	0.7515	0.7715
Proactiveness	0.8579	0.6684
Risk-taking	0.9126	0.8395
Competitive firm performance	0.8923	0.7342

The performed AVE analysis demonstrates AVE values within the range of 0.5908 to 0.8395, which is found to be above the recommended level of 0.50. The calculated values of construct reliabilities range from 0.7515 to 0.9126, which comes above the recommended minimum level of 0.70. Therefore, the analysis allowed confirming the validity and reliability of the constructs employed in this research.

3.1.4. Test of the impact of learning behaviour on competitive firm performance

In order to test the hypotheses, firstly, hierarchical regression analysis was conducted. Hierarchical regression analysis adds variables to the regression model in stages. Therefore, firstly, the effect of learning behaviour on the competitive performance of a firm was analysed, and a significant relationship was revealed between the two variables (β= 0.425, p= 0.000, r^2= 0.188). Thus, Hypothesis 1 was confirmed. The analysis on the relationships between separate dimensions of the learning behaviour construct and the competitive performance of a firm suggests that learning from experience has a significant positive effect on the competitive performance of a firm (β= 0.387, p= 0.000, r^2= 0.150) as well as learning by experimenting (β= 0.396, p= 0.000, r^2= 0.157). Therefore, Hypothesis 1a and Hypothesis 1b were confirmed.

Next, the entrepreneurial orientation (EO) variable was added to the model, which revealed that the model is improved by adding the EO variable (β= 0.427, p= 0.000, r^2= 0.307) (see Table 24).

Table 24. Hierarchical regression analysis
(developed by the author)

CFP	*Model 1*		*Model 2*	
	β	p	β	p
Predictors				
Learning behaviour	.434	.000	.183	.001
Entrepreneurial orientation			.427	.000
R square	0.188		0.307	
Adjusted R square	0.186		0.303	

Having established the model improvements after adding the entrepreneurial orientation variable, further procedures were used in order to understand the role which entrepreneurial orientation plays in the relationship between the learning behaviour within the firm and the competitive performance of this firm.

3.1.5. Test of the role of entrepreneurial orientation in the relationship between learning behaviour and firm performance

In order to test Hypothesis 2, following Hayes (2009; 2012; 2013), simple mediation analysis using the PROCESS modelling tool (Model 4) for SPSS and SAS was conducted. PROCESS combines a variety of other tools of statistical analysis, such as the SOBEL test, INDIRECT, MODMED, and offers measures of both indirect and direct effects in the mediator analysis. Figure 8 depicts the outcome of PROCESS simple mediation analysis.

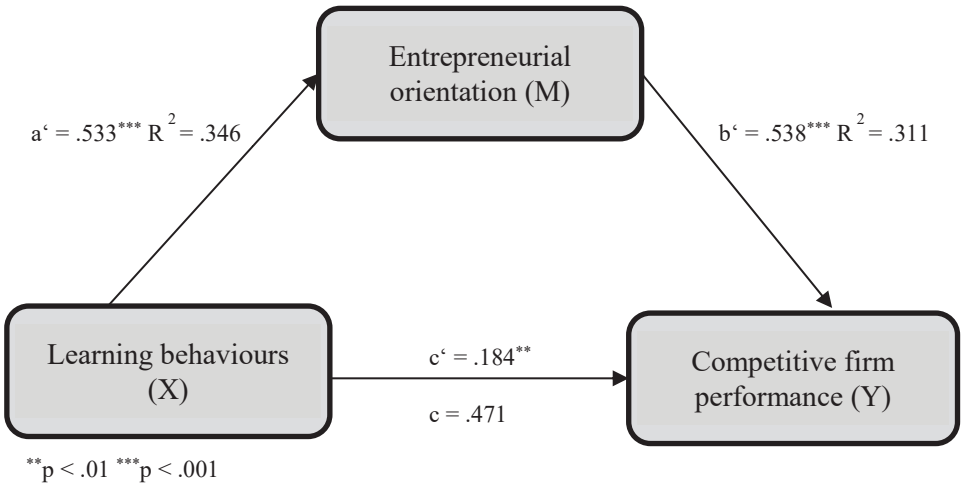

Figure 8. Simple mediation analysis using PROCESS for SPSS (developed by the author)

In addition to the path coefficients, the direct effect and the indirect effect were calculated. In the light of recent suggestions (Rucker *et al*., 2011; Hayes, 2013), the total effect was not calculated prior to the estimation of both direct and indirect effects. Even though the direct effect of the learning behaviour on the competitive performance of a firm is not significant, the inference about the indirect effect is based on the quantification of the indirect effect itself. The results demonstrate that we observe a significant ($p < 0.01$) indirect effect of the learning behaviour on the competitive performance of a firm through the entrepreneurial orientation as a mediator (effect= 0.184). Furthermore, the indirect effect is significant with all the mediating sub-variables: innovativeness (effect= 0.150), risk-taking (effect= 0.139), and proactiveness (effect= 0.204). Yet, the greatest indirect effect among the

mediating sub-variables was found with proactiveness (effect= 0.204). When indicating complete mediation, the learning behaviour variable lost its significant influence on the competitive performance of a firm when the entrepreneurial orientation was included into the model as a mediator.

In order to confirm the mediating effect of the entrepreneurial orientation on the direct effect of the learning behaviour on the competitive performance of a firm, the bootstrapping technique was applied. Usage of 1000 replications allowed forming 95% confidence intervals which are necessary to conclude that the testing impact is significantly different from zero. The results of bootstrapping analysis are provided in Table 25 below.

Table 25. Results of bootstrapping analysis
(developed by the author)

Path	*Y: Competitive firm performance*		
	*EF***	*95 % confidence interval**	
		LLCI	*ULCI*
DIRECT effect of learning behaviour on the competitive firm performance			
LEARNING BEHAVIOURS → COMPETITIVE FIRM PERFORMANCE[1]	0.184	0.060	0.309
INDIRECT effect of learning behaviours on the competitive firm performance			
LEARNING BEHAVIOURS → ENTREPRENEURIAL ORIENTATION → COMPETITIVE FIRM PERFORMANCE[2]	0.287	0.202	0.370
TOTAL effect of learning behaviour on the competitive firm performance			
LEARNING BEHAVIOURS → COMPETITIVE FIRM PERFORMANCE[3]	0.471	–	–
* 1000 replications were performed to form 95% bootstrapping confidence intervals ** EF means effect.			
[1] EF = c' [2] EF = ab [3] EF = c (sum of all effects)			

The empirical results, therefore, support Hypothesis 2, Hypothesis 2a, Hypothesis 2b, and Hypothesis 2c.

3.1.6. Test for the effect of controlling variables

Finally, the effect of controlling variables of the firm size and the business sector for the mediation effect of the entrepreneurial orientation on the relationship between the learning behaviour and the competitive performance of a firm was tested.

First, the control variables of the firm size and sector within which the firm operates were entered into the analysis (Model 1). Next, the independent variable of the learning behaviour was added (Model 2). Then, the mediating variables of the dimension of innovativeness (Model 3), the dimension of risk-taking (Model 4), and

the dimension of proactiveness (Model 5), as well as the overall entrepreneurial orientation (Model 6) were added to the analysis.

Table 26. Multiple-step hierarchical regression analysis
(developed by the author)

CFP	***Model 1***		***Model 2***		***Model 3***		***Model 4***		***Model 5***		***Model 6***	
	β	***p***	***β***	***p***	***β***	***p***	***β***	***p***	***β***	***p***	***β***	***p***
Controls												
Firm size (C1)	.018	.799	-.003	.964	.008	.968	.012	.812	-.001	.899	-.021	.898
Sector (C2)	.074	.298	-.044	.519	.012	.566	.011	.644	.012	.598	-.043	.721
Predictor												
LB			.405	.000	.544	.000	.561	.000	.433	.000	.214	.012
Mediating variable												
Innovativeness					.398	.000						
Proactiveness							.294	.000				
Risk-taking									.179	.009		
EO											.468	.000
R square	0.005		0.156		0.228		0.202		0.259		0.300	
Adjusted R square	-0.004		0.144		0.220		0.194		0.251		0.291	

The effect of the learning behaviour on the competitive performance of a firm was proved to be positive and rather significant after controlling for the size and the industry sector (β= 0,405; p= 0.000). Moreover, the mediating effect of the variable of entrepreneurial orientation was supported by regression analysis (β= 0.468; p= 0.000), as well as its separate dimensions: innovativeness (β= 0.398; p= 0,000), risk-taking (β= 0.294; p= 0.000), and proactiveness (β= 0.179; p= 0.009). The model of the effect which the learning behaviour exerts on the competitive performance of as firm (R^2= 0,156) was improved when innovativeness (R^2= 0.228), risk-taking (R^2= 0.202), proactiveness (R^2= 0.259), and entrepreneurial orientation (R^2= 0.300) were added to it. These findings do not contradict those from the PROCESS analysis, and they also support Hypothesis 2, Hypothesis 2a, Hypothesis 2b, and Hypothesis 2c.

Overall, the empirical results supported two out of three hypotheses. Table 27 illustrates the effect of our empirical analysis on the approval or disapproval of the hypotheses.

Table 27. Multiple-step hierarchical regression analysis
(developed by the author)

Hypothesis		*Results*
H1	There exists direct positive relationship between the learning behaviour and the competitive firm performance.	Supported
H1a	There exists direct positive relationship between the learning from experience and the competitive firm performance.	Supported
H1b	There exists direct positive relationship between the learning by experimenting and the competitive firm performance.	Supported
H2	Entrepreneurial orientation of an established firm mediates the effect that the learning behaviour has on the competitive performance of a firm.	Supported
H2a	Innovativeness mediates the effect that the learning behaviour has on the competitive performance of a firm.	Supported
H2b	Proactiveness mediates the effect that the learning behaviour has on the competitive performance of a firm.	Supported
H2c	Risk-taking mediates the effect that the learning behaviour has on the competitive performance of a firm.	Supported

3.2. Findings of the qualitative research

The data collected in the course of the qualitative research was analysed by using the Eisenhardt approach (Eisenhardt and Graebner, 2007) which relies on analytical pattern matching and analytical generalisation. This approach allowed the analysis to be performed within each case as well as across the cases. This resulted in the identification of common patterns and categories (Javaid and Hyder, 2018).

The operationalisation of the key principles on which the data analysis was focused is as follows (see Figure 9). During the first step, all the data gathered from interviews and focus groups were transcribed and placed into the analytical matrix locating all cases and responses in one place. This allowed at the later stage of analysis to facilitate the use for comparability between cases. Then, the pattern-coding process underwent several iterations as new patterns emerged. The identified patterns were then compared and analysed between the cases of innovative and non-innovative firms.

Figure 9. Qualitative data preparation process
(developed by the author)

The analysis of the data obtained in interviews revealed 12 categories related to the analysed constructs (see Table 28).

Table 28. Categories and numbers of the assigned codes (developed by the author)

No.	*Category*	*Total used codes (times)*	*Codes used within innovative firms (times)*	*Codes used within non-innovative firms (times)*
1	Application of new knowledge	16	11	5
2	Learning activities within the firm	21	10	11
3	Motivators / Stimulators for employees' regular innovative idea developments	30	18	12
4	Reasons for accepting / not accepting risks	12	7	5
5	Reasons for following new trends in technologies	20	10	10
6	Risk tolerance	20	8	12
7	Selecting new ideas	26	13	13
8	Share of budget for innovative projects development / research	17	11	6
9	Sources of learning	3	1	2
10	Type of funding for innovative projects development / research	13	5	8
11	Ways of following new trends in technologies	11	9	2
12	Ways of transmitting experience within the firm	23	12	11

The analysis of code frequency within the data provided by the interviews shows that strong attention was placed at the drivers of innovative attitude of the employees towards the development and suggestion of new ideas at the firm. The approach towards selecting new ideas at the firm received great attention during the interviews as well. The learning activities and categories that were associated with knowledge emerged as being important in terms of the interview data.

Interview data analysis revealed some insights into learning activities within the interviewed firms and knowledge factors that are associated with these learning activities (see Table 29).

Table 29. Learning behaviours and knowledge factors across the cases (developed by the author)

Case	**Learning behaviours & knowledge**		
	Learning activities within the firm	*Application of new knowledge*	*Knowledge transferring*
Case A	Planned; Regulated	Product	Personal sharing
Case B	Planned	Performing the task	Formal meetings; Personal sharing
Case C	Planned	Increasing efficiency	Formal meetings; Personal sharing; Storing
Case D	Planned; Limited	Filling the gaps	Formal meetings; Personal sharing
Case E	Planned; not planned	Common knowledge; Increasing efficiency	Personal sharing
Case F	Planned	Common knowledge	Formal meetings; Personal sharing
Case G	Not planned	N / A	Personal Sharing
Case H	Not planned	Performing the task	N / A
Case J	Not planned	Product	Formal meetings; Personal sharing; Trainings
Case K	Planned	Performing the task	Personal sharing
Case L	Not planned	Common knowledge	Personal sharing
Case M	Planned	Increasing efficiency	Formal meeting; Training

Our data analysis demonstrates that learning activities within the firm lead to the development of knowledge which is later used for the formation of common knowledge, increase of job efficiency, implementation of daily tasks or upgrades of the product. The knowledge is shared within the firm through personal 'eye-to-eye' contacts and in formal settings during meetings.

What regards the learning activities within the surveyed firms, the firms from innovative and non-innovative business sectors differ in terms of how learning activities within firms are organised (see Table 30). The results of the interview data suggest that, more commonly, learning as an activity is not planned on the organizational level at the firms which are operating in non-innovative business sectors:

"*We have no specific training plans; it depends on necessity*" (Manager, Case J).

On the contrary, firms operating within innovative business sectors reported that learning activities at their firms are more planned:

"We have compulsory training; and that takes place inside the company. And we have regular training, and outside training at that" (Employee, Case A).

Table 30. Learning activities across cases
(developed by the author)

Learning activities		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Not planned	1	6
Limited	1	0
Planned	7	4
Regulated	1	0
Starting to plan	0	1

Furthermore, the interview data revealed that firms from innovative and non-innovative business sectors differ in terms the application of new knowledge within the firm (see Table 31). Firms that were operating within innovative business sectors were found to be more commonly emphasising the application of new knowledge comparing to the firms which were operating in non-innovative business sectors. It is evident from the gathered data that knowledge sharing is more common in the firms from the innovative business sectors. These firms were found to have processes in place for ensuring knowledge sharing within the firm:

"*There are also internal seminars where an employee after the completion of the courses shares knowledge with others*" (Manager, Case D).

Furthermore, knowledge sharing was found to be the necessary element of employee training activities within the firm:

"*In any case, if you attend a seminar, you have to pass the information to your team*" (Manager, Case F).

Interview data demonstrate that firms operating within non-innovative business sectors more frequently apply new knowledge in order to be able to perform daily tasks:

"*Some apply [knowledge] very directly, for example, [those] who work in bookkeeping, personnel, the law has an impact on this, what regards labelling. There are very practical training activities. Management training is a bit abstract, but we apply some of the procedures*" (Employee, Case K).

Firms operating in innovative business sectors, on the other hand, were found to be applying new knowledge for increasing their job efficiency:

"*I have really sped up my work, I have found some places in the system where I thought that I really did wrong, and then, after the training, I corrected those items. These corrections saved considerable time for subsequent work. The efficiency increased*" (Employee, Case C).

The development of a product was also found to be the function for which newly acquired knowledge is applied within innovative firms:

"*A very good answer [is] that [lies] in the product. A short and correct one*" (Manager, Case A).

The interview data also demonstrates that new knowledge might be applied for building common understanding:

"*Not all training can be applied, some of it is just for common knowledge, and some is specific*" (Employee, Case E).

Table 31. Application of new knowledge across cases
(developed by the author)

Purpose of new knowledge application		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Common knowledge	2	1
Filling the gaps	1	0
Increasing efficiency	2	1
Performing the task	1	2
Product	2	1
Sharing	3	0

It is evident from the interview data that firms operating in innovative business sectors use formal meetings as a way to share knowledge between the colleagues (see Table 32):

"*After the project has come to an end, the teams make presentations on the achievements and results for the managers to discuss. This probably provides employees with the information which is, then, passed from mouth to mouth*" (Manager, Case C).

All the surveyed firms stated that knowledge sharing on the personal level is one of the most commonly used ways to transfer knowledge within the team:

"*We share information internally, on personal basis*" (Employee, Case D).

"*We learn from mistakes, events, we always talk in order to avoid such events. We share experience and good practice, and talk*" (Manager, Case L).

Only one firm within the studied sample has developed a formal knowledge storing tool for open and easy use of the learning outcomes to all the employees.

Table 32. Ways of transferring knowledge within a firm
(developed by the author)

Internal knowledge transferring		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Formal meetings	5	2
Personal sharing	6	7
Storing	1	0
Training	0	2

In terms of the drivers for entrepreneurial behaviours within the researched firms, data analysis demonstrates that three groups of drivers may be outlined: these that are related to the proactiveness dimension of entrepreneurial orientation, these

related to the dimension of innovativeness, and these related to the dimension of risk-taking (see Table 33).

Table 33. Expressed drivers for entrepreneurial behaviours within firms (developed by the author)

Case	**Expressed drivers of entrepreneurial behaviours**		
	For Proactiveness	*For Innovativeness*	*For Risk-taking*
Case A	N / A	Nominating events; Results	Market
Case B	Adopting latest methods/technologies; Changes in regulatory mechanisms	Results	Legal aspects
Case C	N / A	Financial bonus; Freedom to experiment; time; Work efficiency	Future perspectives; New competences
Case D	Adopting latest methods/technologies	Financial bonus; Opportunities for career	Resources
Case E	Adopting latest methods/technologies	Lack of motivators; Opportunities for career; Work efficiency	Profits
Case F	Adopting latest methods/technologies; Gaining competitive advantage	Financial bonus; Organizational culture; Self-motivation	Treating risk as unavoidable element in business
Case G	Adopting latest methods / technologies; Being in line with competitors	Financial bonus; Self-motivation	Process
Case H	Adopting latest methods/technologies	Financial bonus; Opportunities to attend exhibitions; Work efficiency	Resources
Case J	Adopting latest methods / technologies; Improving product; Reaching customers	Self-motivation	Profits
Case K	Product development	Financial bonus; Opportunities to attend exhibitions	Resources
Case L	Adopting latest methods / technologies	Financial bonus	Resources
Case M	N / A	Financial bonus; Nominating events	N / A

Drivers for proactive behaviour within the surveyed firms were demonstrated through the reasoning for the following new trends in technological development (see Table 34).

Table 34. Drivers for proactive behaviour across cases
(developed by the author)

Drivers of proactive behaviour		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Adopting latest methods / technologies	5	8
Being in line with competitors	0	1
Changes in regulatory mechanisms	2	1
Gaining competitive advantage	2	0
Reaching customers	0	1

Most commonly, respondents named the need to adapt new methods and technologies as one of the greatest drivers towards being proactive. Firms in both innovative and non-innovative business sectors were found to be constantly overlooking new trend(s) in technological development so that to adjust their products and services and/or to develop new ones:

"*We have to follow because, in this sector, the latest methods of analysis should be applied, the latest technologies implemented, and we have to follow everything and implement*" (Manager, Case B).

"*If you want to release a new product into the market, new technology and equipment is necessary for its production. Just to expand and improve*" (Employee, Case K).

Interestingly, firms from innovative business sectors and those coming from non-innovative business sectors were different in terms of their attitude towards competitive environment. Some respondents from innovative business sectors suggested that the wish to overcome their competitors is one of the drivers of their proactive behaviour within the firm:

"*I am in particular interested in what is related to my work, and, of course, I want to be in advantage in comparison to my competitors*" (Manager, Case F).

Meanwhile, emphasis on staying in line with the competitors was expressed in one of the responses from non-innovative sectors:

"*We keep on observing, all the time observing. The essence is not to fall behind our competitors*" (Employee, Case G).

Table 35. Ways of following new trends in technologies across cases (developed by the author)

Ways of following new trends in technologies		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Forming / participating in interest groups	3	0
Performing job duties	2	0
Professional development	1	0
From suppliers	2	0

Some differences among firms operating in innovative and non-innovative business sectors may be noticed as well in terms of the driving force for the development of innovative ideas (see Table 36). While in firms operating in the innovative business sectors motivators for the employees' regular innovative idea development are denoted by a wide spectrum of factors, firms operating in the non-innovative business sector mainly reported financial outcomes as the central motivator for such an activity. Firms from innovative business sectors reported that their organizational culture encourages them to aim for the development of innovative ideas, as well as for the willingness for the firm to succeed:

"*The culture is such that we accept innovations*" (Manager, Case F).

"*Suggest. Because they have a long-term experience in the enterprise, and they are interested in the result. They are part of the team*" (Manager, Case B).

Furthermore, opportunities to achieve promotion create stimulus for thinking 'outside the box' and looking for new ideas:

"*They can develop their career, they can become leaders*" (Manager, Case D).

However, interview data analysis reveals that financial motivators are perceived as most commonly motivating the staff to engage into innovative idea development:

"*If your results are high, you get an increase in your salary*" (Employee, Case L).

Table 36. Drivers of innovative behaviour across cases (developed by the author)

Drivers of innovative behaviour		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Financial bonus	4	5
Lack of motivators	1	0
Opportunities for career	2	0
Opportunities to attend exhibitions	0	3
Organizational culture	4	1
Firm success (results)	2	0
Self-motivation	1	2
Work efficiency	2	1

In terms of the dimension of risk-tolerance of the entrepreneurial orientation within the interviewed firms (see Table 37), it could be noted that respondents from innovative firms perceive well that there is risk-tolerance involved to at least some extent within their firms:

"*Tolerate. There were some unsuccessful projects where we did everything but commercially they were not good*" (Manager, Case D).

Firms coming from innovative business sectors accepted risk-tolerance at a higher level more frequently in comparison to firms competing in non-innovative sectors:

"*Yes. In order to make a profit, because if there is no risk, the profit is less*" (Manager, Case C).

None of the interviewed firms from innovative business sectors regarded themselves as the company where acceptance of risky initiatives is very low, while, in a few firms from non-innovative business sectors, this was exactly the case:

"*Not really. Because we are not financially big monsters to do some kind of 'crazy' things*" (Manager, Case L).

Table 37. Risk tolerance across cases
(developed by the author)

Risk tolerance		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Limited tolerance	0	2
Tolerance of calculated risks	3	6
High level of tolerance	5	4

The analysis of the interview data reveals that there is no significant difference in the responses of the interviewees regarding the drivers for tolerating risky projects (see Table 38). Firms operating in both sectors agree that the risk must be understood as an essentially natural element of the process of doing business:

"*Business is in principle a risk, in the first place*" (Manager, case F).

Furthermore, risk is associated with greater profits and the firm performance results in the firms from the innovative business sector as well as in firms from the non-innovative business sector:

"*In order to make a profit, because if there is no risk, the profit is less*" (Manager, Case E).

It should be noted that in some of the firms from innovative business sectors associated risky projects with opportunities to gain new competences, to gain knowledge about the customers, or to attract future investors:

"*Nevertheless, the project is still undertaken as it provides possibilities to acquire some very useful competencies, to get closer to the customer and have some kind of an investment in the future, and then such risks are manageable*" (Employee, Case C).

Unavoidably, resources play a great role in stimulating higher levels of risk tolerance, or, on the other hand, constraining it. Analysis of interview data suggests that should the firm possess sufficient resources, it would accept more risky projects:

"*Because we are not financially big monsters to do some kind of 'crazy' things*" (Employee, Case L).

Finally, interview data analysis demonstrates that the market plays an important role in the decision whether to tolerate or not risky projects within the firm:

"*Maybe we were more risky when the market was more liberal, but now, the life changed. This makes us calculate very carefully to make self-assessment*" (Manager, Case A).

Table 38. Drivers for risk tolerance across cases
(developed by the author)

Drivers for risk tolerance		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Treating risk as an unavoidable element in business	1	1
Future perspectives	2	0
Profits	1	1
Resources	1	2
Market	2	0

The interviewees were asked to elaborate on the proportion of the overall budget of the firm, while emphasising the portion that is dedicated to the research and innovation activities and new advancements. The responses demonstrate that the firms operating in innovative business sectors tend to dedicate more financial resources towards research-related activities and the development of innovative products and services (see Table 39).

Table 39. Share of the budget for research/innovations across cases
(developed by the author)

Share of budget for research/ innovations		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
None	2	1
Low	1	3
Accommodating the needs	1	0
Varying	2	1
High or increasing	5	0

The analysis of the interview data suggests that innovative firms tend to invest large portions of their budgets into research and development activities as well as innovation-related activities:

"*For example, 30% purely for innovations when it was not clear if they are going to bring any profit*" (Manager, Case D).

Such firms allocate funds from the overall budget for training as well as technological solutions:

"*It is hard to even identify the part, because it varies depending on the different job roles, some may need more training and technology, others less*" (Employee, Case C).

On the other hand, the firms operating within non-innovative business sectors were generally found to invest lower portions of their overall budgets into research and innovation activities:

"*I would say a small part, but I would not like to say the number, because I could answer incorrectly, but a small part yes*" (Manager, Case K).

The responses of interviews provide an overall idea on the type of funding that is being allocated for innovative and research projects within firms. Table 40 provides some details on the three types of funding: collaboration, third-party funding, and indirect funding.

Table 40. Type of funding for innovative projects/research across cases (developed by the author)

Type of funding for innovative projects/research		
Assigned code	*Times repeated across innovative firms*	*Times repeated across non-innovative firms*
Collaborations	1	0
Competitive third-party funding	1	3
Indirect	3	5

It should be noted that the firms operating in non-innovative business sectors seek for outside funding for their innovative and research activities. External funding often relies on the use of European Union funds:

"*Yes, we had an EU project grant*" (Manager, Case H).

Furthermore, the firms operating in non-innovative business sectors were more commonly allocating indirect resources for their research and innovative activities. The indirect type of funding was suggested as the funding for trainings:

"*Yes, they allot budget for trainings. But what part we cannot tell*" (Employee, Case H).

Time was discovered to be another source of the indirect type of funding for innovative and research activities:

"*It is spent for workshops, staff time (at the office)*" (Employee, Case J).

Interestingly, indirect funding for research and innovations activities emerged mainly within the answers from employees.

The overall analysis of the gathered qualitative data illustrates some differences among the cases from innovative and non-innovative business sectors. The data from innovative business sectors demonstrates that learning activities are

normally planned within organizations. These activities result in developing new knowledge for increasing the job efficiency, developing products, and filling the identified competence gaps. Knowledge within innovative firms is found to be shared in formal and informal ways. There is data evidence that the knowledge which is developed through learning activities is stored within the organization for easy access by every member of the firm. Proactiveness is perceived in innovative firms as the opportunity to adapt the latest methods and technologies for gaining competitive advantage. Innovativeness within these firms is expressed as the result of their rewards systems and the organizational culture and/or climate. The innovative posture was found to improve firm results, and, at the same time, it enhances the personal development of employees in terms of their career development. Risk is associated with greater profits and firm performance results according to the data coming from innovative cases. Risk-taking is also perceived as the opportunity to gain new competences, and to familiarise the firm with its customers. Respondents from innovative firms suggested that risky projects also provide opportunities to attract future investors.

In contrast, the learning activities in non-innovative cases are more commonly found to be *ad hoc* and unplanned. The knowledge which comes from learning activities was found to assist in performing daily routines and tasks. Mostly, knowledge sharing activities are performed in an informal way within firms from non-innovative business sectors. Contrary to innovative firms, firms coming from non-innovative business sectors perceive the proactive posture of the firm as the way to stay in line with their competitors. Innovativeness is usually expressed as a result of financial and non-financial rewards within these firms. The absence of risk tolerance emerged in some cases in non-innovative business sectors.

4. DISCUSSION AND IMPLICATIONS

This study attempts to provide empirical evidence which could support the relationships between the learning behaviour, the entrepreneurial orientation of the firm, and the firm performance as established in the course of the analysis of research literature.

The extent of the analysis of the available research on the learning behaviour and entrepreneurial orientation revealed that scholars have been developing both concepts for more than 30 years. Learning behaviours within the firm were analysed in the context of the organizational learning approach and are perceived as an attribute of the organizational learning focusing on two elements within the organizational learning process: experience and experimentation. The element of experience is highlighted throughout the engagement into higher or lower levels of learning within the firm (Sadler-Smith, 2006). Experimentation was found to be directly associated with the development of new knowledge (Dess *et al*., 2003; Migdadi, 2019).

The entrepreneurial orientation of an established firm is viewed within academic literature as the strategic posture of the firm, and it is found to be the antecedent of the dynamic capabilities which are an essential resource for the firms during the times of constant changes and uncertainty (Zahra, 2006; Teece, 2012). Throughout the evolution on the research on the concept of entrepreneurial orientation, various dimensions of the construct emerged. However, the original distinction among the dimensions of innovativeness, risk-taking, and proactiveness still remains the most commonly used one by researchers (Martens *et al*., 2016).

The conducted literature analysis reveals that the appropriate learning initiatives have always been seen as one of the key drivers in boosting the performance results of the firm (Elinger *et al*., 2002; Jerez-Gomez *et al*., 2005; Chiva *et al*., 2007; Goh *et al*., 2012). In response to the call of academicians to investigate the indirect approaches to the relationship between learning within the firm and the firm's performance (Altinay *et al*., 2016; Zhu *et al*., 2019), the possible theoretical relationships among the learning behaviour, the entrepreneurial orientation, and the firm performance have been assessed. The analysis explicitly revealed that learning within the firm and its entrepreneurial orientation are two interdependent elements as determined by management and strategic management studies (Martin-Rojas *et al*., 2011; Villiers-Scheepers, 2012; Belousova and Gailly, 2013). Researchers suggest that the relationship between the organizational level learning and the entrepreneurial orientation may be explained through the dyadic effect (Haase *et al*., 2015). This explains the differences between the approaches used by researchers to investigate the relationships between the organizational level learning, the entrepreneurial orientation, and the firm's performance. While some studies suggest that learning activities serve as intermediate factors in the relationship between the entrepreneurial orientation and the firm's performance (Wang, 2008; Lin *et al*., 2009; Jiao *et al*., 2010; Rhee *et al*., 2010; Soares and Perin, 2020), others see the entrepreneurial orientation as the missing link in the relationship between the organizational level learning and the firm's performance (Zhu *et al*., 2019).

The theoretical analysis allowed identifying two groups of factors which may also impact the strengths of the relationships among the learning behaviour, the

entrepreneurial orientation, and the firm's performance thus ultimately explaining these relationships more profoundly. These aspects include knowledge which is considered as an outcome of learning activities within the firm (Pollok *et al*., 2019) and is perceived as a factor enhancing entrepreneurial activities within the firm (Belousova and Gailly, 2013). Furthermore, an important role was found to be played by organizational factors which enable the entrepreneurial orientation within the firm. Those factors include the management support, time availability, rewards, and the job autonomy (Hornsby *et al*., 1993).

The empirical testing of the established theoretical relationships was performed following the mixed methods research design where quantitative testing by using the survey method was performed first and then followed by qualitative testing while using the multiple case study method. By taking the mixed methods stance towards the empirical testing of the established theoretical relationships, the knowledge gained from empirical findings became more case-specific; it thus provided deeper understanding of the researched problem. The results of the qualitative part of this research support the relationships established in the quantitative part of the research thus taking it further and allowing to elaborate on the way how the learning activities within the firm may influence the firm's performance and what triggers the entrepreneurial orientation of an established firm.

The results of the quantitative part of this study confirmed that there is a positive direct impact of the learning behaviour on the results of the competitive performance of a firm. It was found that, while learning from experience and experimentation, an organization perceives its performance results as superior in comparison to the competitors. In fact, it may be assumed that the organization positions itself in a superior position in relation to other competitors in terms of the growth of sales and the increasing number of its new products. These findings are consistent with the previous studies which not only theoretically but also empirically tested the impact which learning at the organizational level exerts on the firm's performance (Lei *et al*. 1999; Jiang and Li, 2008), and, specifically, on the competitive (subjective) performance of the firm. The evidence from the qualitative part of this study provides further insight into the relationship between the learning behaviour and the competitive performance of a firm. It suggests that the knowledge which is generated through learning activities within the firm may become the unique resource of the firm which can later directly influence the firm's performance results. The knowledge gained though learning activities within the firm provides employees with greater knowledge on how to improve their task performance, and, therefore, it affects job efficiency. This finding confirmed the argument of Smith (2012) who suggested that strategically used knowledge within the firm affects the firm's growth and sustainability. The sustainability aspect is achieved through the constant re-use of the knowledge within the firm. For this, firms need to establish structures for communicating their knowledge between different units and storing it for future use. This study demonstrated that the most commonly used method for knowledge transfer across the firm is informal communication and one-on-one talks. However, the organizational memory should not rely exclusively on the employees of the firm. The accessibility to knowledge generated through firm level learning activities could be

improved by setting up guides on the good practice for formal sharing within the firm. However, in terms of this study, it might be assumed that the lack of knowledge storing structures is found due to the size of the surveyed firms. Inconsistency within learning practices and the lack of any established infrastructure were found to be a common denominator for small and medium-sized firms (Saru, 2007).

Furthermore, in order to establish the direct effect exerted by the learning behaviour on the results of the competitive performance of a firm, the findings of this research suggest that the relationship between the learning behaviour and the competitive performance of a firm is improved when the entrepreneurial orientation is included into the model. The thesis provides empirical evidence supporting the assumption of the mediating role of the entrepreneurial orientation in the aforementioned relationship. The conducted empirical analysis of the quantitative research resulted in confirming the mediating role of the entrepreneurial orientation in the relationship between the learning behaviour and the competitive performance of a firm. This result supports the findings of Santos-Vinjande *et al*. (2012) who confirmed the mediating role of the strategic choices in the relationship between the organizational level learning and the firm's performance. These findings suggest that the entrepreneurial orientation of an established firm explains the relationship between the learning behaviour and the results of the competitive performance of a firm. The quantitative findings of this thesis give the idea that a firm which provides the environment where failure is perceived as a good chance to learn and improve, where new knowledge is created through continuous experimentation, and a firm which bases its strategic choices on entrepreneurial notions, is thus the firm where greater performance results are more likely to be achieved. The findings from the qualitative part of this research give further explanations on these findings by confirming that the personal drivers for career development, remuneration or greater efficiency while performing the job tasks play the key role in the way the employee learns at work and applies newly gained knowledge (Chadwick and Raver, 2015).

The results of the quantitative research demonstrated that the size of a firm and the business sector do not exert significant influence on the relationships among the learning behaviour, the entrepreneurial orientation of an established firm, and the firm's performance. The lack of any significant impact of the firm's size on the investigated relationships may be explained by the composition of the research sample. The majority of the firms which participated in the study were small and medium-sized entities. This may have contributed to such a result. In order to test the influence of the business sector on the investigated relationships, the research sample was constructed so that to capture firms operating in the innovative as well as in the non-innovative business sector. Even though the results demonstrate the effect of the business sector on the relationships among the learning behaviour, the entrepreneurial orientation, and the firm's performance, this effect is not significant. However, the findings from the qualitative data analysis suggest that firms operating in innovative business sectors and non-innovative business sectors do actually differ. The major differences were identified in terms of the different approaches towards organising learning activities within the firm, different ways for new knowledge application

within the firm, different attitudes towards the competitive environment of the firm, and different budget allocations for research and innovation activities.

CONCLUSIONS, LIMITATIONS AND FURTHER RESEARCH

Based on the developed research, the thesis draws several conclusions:

1) The thesis has reviewed scholarly literature on the learning behaviour and the entrepreneurial orientation of an established firm; the key concepts are conceptualised as follows:
   - The learning behaviour is individual, collective and organizational activities within the firm that are aimed at the exploitation of existing knowledge, competences and experience as well as acquisition and development of new knowledge through experimentation with new approaches and ideas.
   - The entrepreneurial orientation of an established firm is the strategic direction of the firm capturing the specifics of methods, practices, behaviours and decision-making styles of entrepreneurs which is expressed through three dimensions: innovativeness, proactiveness, and risk-taking.
   - The competitive performance of a firm is the measurement of the firm's success indicators in relation to its major competitors.
2) The assessment of the theoretical relations between the learning behaviour, the entrepreneurial orientation of an established firm, and the performance results of the firm allows concluding that:
   - Learning activities within the firm are found to be one of the key drivers in increasing the firm's performance results by the development of new knowledge as a strategic resource.
   - The relationship between the learning behaviour and the entrepreneurial orientation is dyadic. Therefore, the learning behaviour and the entrepreneurial orientation may be influenced by each other.
   - The entrepreneurial orientation was found to be able to enhance the results of the financial and non-financial performance of the firm by enabling opportunity recognition and deployment.
3) The thesis has developed a theoretical framework which explains the role of the entrepreneurial orientation of an established firm in the relationship between the learning behaviour and the results of the performance of the firm. This framework is constructed on the following relationships:
   - Experience and experimentation-based learning behaviour within the firm allows the development of new knowledge and conversion of tacit knowledge to explicit knowledge.
   - Knowledge is essential for enhancing the entrepreneurial orientation through the dimensions of innovativeness, proactiveness and risk-taking.

- The entrepreneurial orientation of an established firm enables the identification and deployment of opportunities for greater results of the competitive performance of a firm.
- The learning behaviour within the firm affects its competitive performance through the entrepreneurial orientation of the established firm as the mediator in the aforementioned relationship.

4) The thesis has performed empirical testing of the established theoretical relations among the learning behaviour, the entrepreneurial orientation of an established firm, and the performance results of a firm by following the mixed methods research design. The empirical testing has revealed that:
   - Quantitative testing confirmed the direct effect of the learning behaviour on the results of the competitive performance of a firm and provided empirical evidence supporting the assumption of the mediating role of the entrepreneurial orientation of an established firm in the aforementioned relationship.
   - The results of the qualitative part of the research support the relationships established in the quantitative part of the research and take it further by allowing to elaborate on the differences between the innovative and non-innovative firms within the studied context.
   - Innovative and non-innovative firms differ in terms of the way how learning activities are organised and the new knowledge is applied, what resources are dedicated to the development of innovative projects, and what is the perception of the outcomes stemming from proactive behaviour.
5) The thesis has developed implications for the theory and practice, and, on the grounds of acknowledged limitations of the conducted research, the thesis provides directions for future research.
   - The study adds value to the research field of organizational learning by providing evidence that the impact which the organizational level learning exerts on the firm's performance varies depending on various contextual conditions which also include the strategic choices of the organization. This thesis provides empirical evidence for the mediating effect of the entrepreneurial orientation of an established firm, as the strategic posture of a firm, on the relationship between the learning behaviour of a firm and the results of its competitive performance.
   - This study responds to the urge within the research field of the firm level entrepreneurship to investigate the effect of this kind of entrepreneurship on the non-financial measures of the firm's performance (Zahra *et al*., 2013). Exploration of the role of the

entrepreneurial orientation within the learning and competitive firm performance relationship also corresponds to the need to empirically test the relations between the firm level entrepreneurship and other organizational outcomes, such as learning (Yang *et al*., 2009).

- In terms of practical implications, this study and its findings imply that learning at the organizational level on its own might not be a sufficient effort towards improving the results of the competitive performance of a firm. Learning from experience and learning through experimentation initiatives should be coupled with the entrepreneurial orientation of the established firm. The combination of these activities could result in greater performance results. Furthermore, by taking into account the focus of the previous studies on mainly the financial results of the performance of a firm, this study provides evidence that proper learning activities within the organization along with the entrepreneurial orientation result in greater results of the competitive performance of a firm. Therefore, the stakeholders of a firm should acknowledge that managers shall perceive their firm as achieving greater performance results when the organization encourages learning from experience and learning through experimentation. At the same time, such an organization will be more open to risk-taking, more innovative, and more proactive.
- However, the focus of the study on the results of the competitive performance of a firm leads to the question if the manager's perception of the superior performance of the firm in comparison to the performance of the competitors is always a good thing. It might be the case that the results of the competitive performance of a firm are not necessarily positively reflected in the financial results of the firm's performance. As a result, it may be difficult to conclude that the overall firm's performance is positively affected by the learning behaviour and entrepreneurial orientation. Future research may address this issue by adding the measurement of the financial performance of a firm to the model.
- Another possible drawback of this study lies in the adopted cross-sectional approach. Therefore, longitudinal studies would complement this research stream.
- Future research could also take into account some other characteristics of the researched firms, such as their age or the change(s) in their strategic direction.

REFERENCES

1. Ali, S., Peters, L.D., & Lettice, F. (2012). An organizational learning perspective on conceptualizing dynamic and substantive capabilities. *Journal of Strategic Marketing,* 20(7), 589-607.
2. Altinay, L., Madanoglu, M., De Vita, G., Arasli, H., & Ekinci, Y. (2016). The interface between organizational learning capability, entrepreneurial orientation, and SME growth. *Journal of Small Business Management*, *54*(3), 871–891.
3. Ambrosini, V., Bowman, C. & Collier, N. (2009). Dynamic Capabilities: an Exploration of How Firms Renew Their Resource Base. *British Journal of Management,* 20(S1), S9-S21.
4. Antonacopoulou, E., Jarvis, P., Andersen, V., Elkjaer, B., & Hoyrup, S. (2005). *Learning, working and living. Mapping the terrain of working, life, learning*. New York: Palgrave Macmillan.
5. Antoncic, B. & Prodan, I. (2008). Alliances, corporate technological entrepreneurship and firm performance: Testing a model on manufacturing firms, *Technovation*, 28(5), 257–265.
6. Antoncic, B., & Hisrich, R.D. (2004). Corporate entrepreneurship contingencies and organizational wealth creation. *Journal of Management Development,* 23(6), 518-550.
7. Appelbaum, S.H. & Reichart, W. (1998). How to measure an organization's learning ability: The facilitating factors-Part II. *Journal of Workplace Learning,* 10(1), 15-28.
8. Argote, L. & Miron-Spektor, E. (2011). Organizational learning: From experience to knowledge. *Organization Science*, 22(5), 1123-1137.
9. Argyris, C. & Schon, D.A. (1996). *Organizational Learning II: Theory, Method and Practice*. Reading: Addison-Wesley.
10. Bateson, G. (1972). *Steps to an Ecology of Mind*. Northvale, NJ: Aronson.
11. Baum, J.R., Locke, E.A. & Smith, K.G. (2001). A Multidimensional Model of Venture Growth. *Academy of Management Journal,* 44(2), 292-303.
12. Baker, J., Parasuraman, A., Grewal, D. & Voss, G.B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of Marketing,* 66(2), 120–141.
13. Baker, W.E. & Sinkula, J.M. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. Journal of Academy of Marketing Science, 27(4), 411-427.
14. Bamiatzi, V. Bozos, K., Cavusgil, S.T., & Hult, T.M. (2016). Revisiting the firm, industry, and country effects on profitability under recessionary and expansion periods: A multilevel analysis. *Strategic Management Journal,* 37, 1448-1471.
15. Barling, J., Slater, F., & Kelloway, E.K. (2000). Transformational leadership and emotional intelligence: an exploratory study. *Leadership and Organization Development Journal*, 21(3), 157-161.
16. Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.
17. Belousova, O. & Gailly, B. (2013). Corporate entrepreneurship in a dispersed setting: actors, behaviors, and process. *International entrepreneurship and management journal,* 9 (3), 361-377.
18. Bhave, M.P. (1994). A Process Model of Entrepreneurial Venture Creation. *Journal of Business Venturing,* 9, 223-242.

19. Binham, C.B. & Eisenhardt, K.M. (2011). Rational heuristics: the 'simple rules' that strategists learn from process experience. *Strategic Management Journal*, 32(13), 1437-1464.
20. Parker K.S., Bindl, U.K., & Strauss K. (2010). Making Things Happen: A Model of Proactive Motivation. *Journal of Management,* 36, 827-856.
21. Blackburn, R. & Kovalainen, A. (2009). Research Small Firms and Entrepreneurship: Past, Present and Future. *International Journal of Management Reviews,* 11, 127-148.
22. Bontis, N. (1998). Intellectual Capital: an Exploratory Study That Develops Measures and Models. *Management Decision,* 36(2), 63-76.
23. Borch, O.J. (2004). Building dynamic capabilities for strategic entrepreneurship in SMEs. *NCSB 2004 Conference 13th Nordic Conference on Small Business Research*.
24. Borthick, A.F., Jones, D.R., & Wakai, S. (2003). Designing learning experiences within learners zone of proximal development (ZPDs): enabling collaborative learning on-site and on-line. *Journal of Information Systems*, 17(1), 107-134.
25. Carayannis, E.G., Popescu, D., Sipp, C., & Stewart, M. (2006). Technological learning for entrepreneurial development (TL4ED) in the knowledge economy (KE): Case studies and lessons learned. *Technovation*, 26(4), 419-443.
26. Capello, R. (1999). Spatial Transfer of Knowledge in High Technology Milieux: Learning versus Collective Learning Processes. *Regional Studies,* 33, 353-365.
27. Chiva, R., Alegre, J., & Lapiedra, R. (2007). Measuring organizational learning capability among the workforce. *International Journal of Manpower*, 28(3/4), 224-242.
28. Chou, S.Y. & Ramser, C. (2019). A Multilevel Model of Organizational Learning: Incorporating Employee Spontaneous Workplace Behaviors, Leadership Capital and Knowledge Management. *The Learning Organization*, 26, 132-145.
29. Choi, Y.R. & Shepherd, T.A. (2004). Entrepreneurs' Decisions to Exploit Opportunities. *Journal of Management*, 30(3), 377–395.
30. Chung, H.F.L., Ding, Z., & Ma, X. (2019). Organizational learning and export performance of emerging market entrepreneurial firms: the roles of RBV mechanism and decision-making approach. *European Journal of Marketing*, 53(2), 257-278.
31. Chung, H.F., Yang, Z., & Huang, P.H. (2015). How does organizational learning matter in strategic business performance? The contingency role of *guanxi* networking. *Journal of Business Research,* 68(6), 1216–1224.
32. Cohen, J., Cohen, P., West, S.G. & Aiken, L.S. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences.* Mahwah, New Jersey: Lawrence Erlbaum Associates.
33. Cope, J. (2005). Towards a Dynamic Learning Perspective of Entrepreneurship. *Entrepreneurship Theory and Practise,* 29, 373-397.
34. Cope, J. & Watts, G. (2000). Learning by Doing: and Exploration of Experience, Critical Incidents and Reflection in Entrepreneurial Learning. *International Journal of Entrepreneurial Behaviour and Research,* 6(3), 104-124.
35. Corbett, A. & Neck, H.M. (2010). Corporate Entrepreneurship and the Micro-foundations of Dynamic Capabilities. *Frontiers of Entrepreneurship Research,* 30(17), 1-15.
36. Covin, J.G. & Miles, M.P. (1999). Corporate Entrepreneurship and the Pursuit of Competitive Advantage. *Entrepreneurship Theory and Practice,* 23(3), 47–63.
37. Covin, J.G. & Slevin D.P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10(1), 75-87.

38. Covin, J.G. & Slevin, D.P. (1991). A Conceptual Model of Entrepreneurship as Firm Behaviour. *Entrepreneurship: theory and practice,* 16(1), 7-25.
39. De Jong, J.P.J. and Den Hartog, D.N. (2005) Determinants of innovative behaviour: an investigation among knowledge workers in SMEs. Gedrag & Organisatie, 18, 235–59.
40. DeSimone, R. & Harris, D. (1998). *Human resource development* (2nd ed.). USA: Dryden Press.
41. Dess, G.G., Ireland, R.D., Zahra, S.A., Floyd, S.W., Janney, J.J. & Lane, P.J. (2003). Emerging Issues in Corporate Entrepreneurship. *Journal of Management,* 29, 351-378.
42. Dess, G.G., Lumpkin, G.T., & Eisner, A.B. (2010). *Strategic Management: Creating Competitive Advantages*. 4th ed. New York: McGraw-Hill.
43. DeVellis, R.F. (2003). *Scale Development: Theory and Applications*. 2nd ed. Thousand Oaks, CA: Sage Publications.
44. Drnevich, P.L. & Kriauciunas, A.P. (2011). Clarifying the Conditions and Limits of the Contributions of Ordinary and Dynamic Capabilities to Relative Firm Performance. *Strategic Management Journal,* 32, 254-279.
45. Drumm, H.J. (1995). The Paradigm of a New Decentralization: Its Implications for Organizations and HRM. *Employee relations,* 17(8), 29-45.
46. Dulger, M., Alpay, G., Yilmaz, Z., & Bodur, M. (2014). How do learning orientation and strategy yield innovativeness and superior firm performance? *South African Journal of Business Management,* 45(2), 35-50.
47. Easterby-Smith, M. (2011). A conversation between entrepreneurship and organizational learning. In *Entrepreneurial learning: conceptual frameworks and applications* /edited by Richard T. Harrison and Claire M. Leitch. London: Routledge.
48. Easterby-Smith, M. & Prieto, I. M. (2007). Dynamic capabilities and knowledge management: an integrative role for learning? *British Journal of Management,* 19, 235-249.
49. Eilertsen, S., & London, K. (2005). Modes of Organizational Learning. *Kollner Group*. Available: http://www.kollnergroup.com/wp-content/uploads/2009/11/Modes-of-Organizational-Learning.pdf . Retrieved: 15.11.2014
50. Eisenhardt, K.M. & Martin, M. (2000). Dynamic Capabilities: What are They? *Strategic Management Journal,* 21(10/11), 1105-1121.
51. Ellinger, A.D., Ellinger, A.E., Yang, B., & Howton, S.W. (2002). The relationship between the learning organization concept and firms's financial performance: an empirical assessment. *Human Resource Development Quarterly,* 13(1), 5-21.
52. Emden, Z., Yaprak, A., & Cavusgil, S.T. (2005). Learning from experience in international alliances: Antecedents and firm performance implications. *Journal of Business Research*, 58(7), 883–892.
53. Farzaneh, M., Ghasemzadeh, P, Nazari, J.A., & Mehralian, G. (2020). Contributory role of dynamic capabilities in the relationship between organizational learning and innovation performance. European Journal of Innovation Management, Vol. ahead-of-print No. ahead-of-print.
54. Ferreira, J. (2002). Corporate Entrepreneurship: A strategic and structural perspective. *International Council for Small Business ISCB* 47th World Conference San Juan, Puerto Rico.
55. Fiol, C.M., & Lyles, M.A. (1985). Organizational learning. *Academy of Management Review,* 10(4), 803-13.

56. Fiş, A.M. & Cetindamar, D. (2009). Unlocking the Relationship between Corporate Entrepreneurship and Performance. *PICMET 2009 Proceedings*, August 2-6, Portland, Oregon USA.
57. Floyd, S.W. & Lane, P.J. (2000). Strategizing Throughout the Organization: Managing Strategic Renewal and Strategic Role Conflict. *Academy of Management Review,* 25, 154–177.
58. Franco, M. & Haase, H. (2009). Entrepreneurship: an Organisational Learning Approach. *Journal of Small Business and Enterprise Development,* 16(4), 628-641.
59. Frank, H., Kessler, A., Mitterer, G., & Weismeier-Sammer, D. (2012). Learning orientation of SMEs and its impact on firm performance. *Journal of Marketing Development and Competitiveness,* 6(3), 29-40.
60. George, B.A. & Marino, L. (2011). The epistemology of entrepreneurial orientation: conceptual formation, modelling, and operationalization. *Entrepreneurship: theory and Practice,* 35(5), 989-1024.
61. Glick, W.H., Washburn, N.T., & Miller, C.C. (2005). The myth of firm performance. *Proceedings of the Annual Meeting of American Academy of Management*. Honolulu, Hawaii.
62. Goh, S.C., Elliott, C., & Quon, T.K. (2012). The relationship between learning capability and organizational performance: a meta-analytic examination. *The Learning Organization,* 19(2), 92-108.
63. Green, K.M., Covin, J.G. & Slevin, D.P. (2008). Exploring the relationship between strategic reactiveness and entrepreneurial orientation: the role of structure – style fit. *Journal of Business Venturing,* 23(3), 356-83.
64. Gupta, V.K., Dutta, D.K., & Chen, X. (2014). Entrepreneurial orientation capability and firm performance under conditions of organizational learning. *Journal of Management Issues,* 26(2), 157-173.
65. Guth, W.D. & Ginsberg, A. (1990). Guest Editors' Introduction: Corporate Entrepreneurship. *Strategic Management Journal,* 11, 5-15.
66. Haase, H., Franco, M., & Félix, M. (2015). Organisational learning andintrapreneurship: evidence ofinterrelated concepts. *Leadership & Organization Development Journal*, 36(8), 906-926.
67. Hansen, D.J., Shrader, R., & Monllor, J. (2011). Defragmenting definitions of entrepreneurial opportunity. *Journal of Small Business Management, 49*(2), 283-304.
68. Hargadon, A.B. (2002). Brokering Knowledge: Linking Learning and Innovation. *Research in Organizational Behavior,* 24, 41–85.
69. Harms, R. (2013). From Entrepreneurial Orientation to Performance: inside the black box of corporate entrepreneurship. *Management,* 16(4), 410-421.
70. Hayes, A.F. (2009). Beyond Baron and Kenny: Statistical Mediation Analysis in the New Millennium. *Communication Monographs*, 76(4), 408-420.
71. Hayes, A.F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modelling. *White paper*. Retrieved from http://www.afhayes.com/public/process2012.pdf.
72. Hayes, A.F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: The Guilford Press.
73. Hayton, J.C. & Kelly, D.J. (2006). A Competency-Based Framework for Promoting Corporate Entrepreneurship. *Human Resource Management,* 45(3), 407-427.
74. Helfat, C.E. & Peteraf, M.A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal,* 24(10), 997-1010.

75. Helfat, C.E., Finkelstein, S., Mitchell, W., Peteraf, M.A., Singh, H., Teece, D.J. & Winter, S.G. (2007). *Dynamic capabilities: understanding strategic change in organizations*. London: Blackwell.
76. Hensen, G.S. & Wernerfelt, B. (1989). Determinants of firm performance: the relative importance of economic and organizational factors. *Strategic Management Journal*, 10(5), 399-411.
77. Hitt, M.A., Ireland, R.D., Camp, S.M. & Sexton, D.L. (2001). Guest Editor's Introduction to the Special Issue Strategic Entrepreneurship: Entrepreneurial Strategies for Wealth Creation. *Strategic Management Journal,* 22, 479-491.
78. Hitt M.A., Ireland R.D., and Lee, H. (2000). Technological learning, knowledge management, firm growth and performance: an introductory essay. *Journal of Engineering and Technology Management*, 17, 231–246.
79. Holcomb, T.R., Ireland, R.D., Holmes, R.M. & Hitt, M.A. (2009). Architecture of Entrepreneurial Learning: Exploring the Link among Heuristics, Knowledge, and Action. *Entrepreneurship Theory and Practise,* 33, 167-192.
80. Hornsby, J.S., Naffziger, D.W., Kuratko, D.F. & Montagno, R.V. (1993). An Interactive Model of the Corporate Entrepreneurship Process. *Entrepreneurship: Theory and Practice,* 17(2), 29-37.
81. Hoskisson, R.E. & Busenitz, L.W. (2002). Market Uncertainty and Learning Distance in Corporate Entrepreneurship Entry Mode Choice, in Hitt, M.A., Ireland, R.D., Camp, S.M. & Sexton, D. L. (Eds.), *Strategic entrepreneurship: creating a new integrated mindset*. Oxford, UK: Blackwell Publishers, 151-172.
82. Huber, G. (1991). Organizational learning: the contributing processes and the literatures. *Organization Science,* 2(1), 88-115.
83. Hung, R.Y.Y., Yang, B.L., McLean, G. & Kuo, Y-M. (2010). Dynamic capability: impact of process alignment and organizational learning culture on performance. *Journal of World Business,* 45, 285-294.
84. Inkpen, A.C., & Crossan, M.M. (1995). Believing is seeing: Joint ventures and organization learning. *The Journal of Management Studies,* 32(5), 595-618.
85. Jain, A. & Moreno, A. (2015). Organization learning, knowledge performance and firm performance. *The Learning Organization*, 22(1), 14-39.
86. Jansen, J.J.P., Van den Bosch, F.A.J. & Volberda, H.W. (2006). Exploratory Innovation, Exploitative Innovation, and Performance: Effects of Organizational Antecedents and Environmental Moderators. *Management Science,* 52(11), 1661-1674.
87. Jantunen, A., Puumalainen, K., Saarenketo, S., & Kylaheiko, K. (2005). Entrepreneurial orientation, dynamic capabilities and international performance. *Journal of International Entrepreneurship,* 3, 223–243.
88. Jerez-Gomez, P., Cespedes-Lorente, J., & Valle-Cabrera, R. (2005). Organizational learning capability: a proposal of measurement. *Journal of Business Research,* 58, 715-725.
89. Jiang, X. & Li, Y. (2008). The relationship between organizational learning and firm's financial performance in strategic alliances: A contingency approach. *Journal of World Business,* 43, 365-379.
90. Jiao, H., Wei, J., & Cui, Y. (2010). An empirical study on paths to develop dynamic capabilities: From the perspectives of entrepreneurial orientation and organizational learning. *Frontiers of Business Research in China*, 4, 47–72.
91. Kamaya, M.T., Ntayi, J.M., & Ahiauzu, A. (2011). Organisational learning and competitive advantage: testing for the interacting influence of knowledge

management and innovation. *International Journal of Innovation and Learning,* 10(4), 376-401.
92. Keh, H.T., Nguyen, T.T.M., & Ng, H.P. (2007). The effects of entrepreneurial orientation andmarketing information on the performance of SMEs. *Journal of Business Venturing*, 22, 592–611.
93. Kemelgor, B.H. (2002). A comparative analysis of corporate entrepreneurial orientation between selected firms in the Nether Land and USA. *Entrepreneurship and regional development,* 14, 67-87.
94. Knight, G.A. (1997). Cross-cultural reliability and validity of a scale to measure firm EO. *Journal of Business Venturing*, 12(3), 213-225
95. Krzakiewicz, K. (2013). Dynamic capabilities and knowledge management. *Management,* 17(2), 1-15.
96. Kuchinke, K.P. (1995). Managing learning for performance. *Human Resource Development Quarterly,* 6(3), 307-316.
97. Kuratko, D.F., Ireland, R.D., Covin, J.G., & Hornsby, J.S. (2005). A model of middle-level managers' entrepreneurial behavior. *Entrepreneurship Theory & Practice,* 29(6), 699-716.
98. Lages, L.F., Jap, S.D., & Griffith, D. (2008). The Role of Past Performance in Export Ventures: A Short-Term Reactive Approach. *Journal of International Business Studies*, 39(2), 304–25.
99. Latour, B. (2005). *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.
100. Lee, S.M, Peris-Ortiz, M. & Fernandez-Guerrero, R. (2011). Corporate Entrepreneurship and Human Resource Management: Theoretical Background and a Case Study. *International Journal of Manpower,* 32(1), 48-67.
101. Lei, D., Slocum, J.W., & Pitts, R.A. (1999). Designing organizations for competitive advantage: the power of unlearning and learning. *Organizational Dynamics,* 37(3), 24-38.
102. Leitch, C.A., & Harrison, R.T. (2011). Entrepreneurial learning. In *Entrepreneurial learning: conceptual frameworks and applications* /edited by Richard T. Harrison and Claire M. London: Leitch. Routledge.
103. Leitch, C., Harrison, R.T., Burgoyne, J. & Blantern, C. (1996). Learning organizations: The measurement of company performance. *Journal of European Industrial training,* 20(1), 31-44.
104. Leifer, R., McDermott, C., O'Connor, G., Peters, L., Rice, M., & Veryzer, R. (2000). *Radical Innovation: How Mature Companies Can Outsmart Upstarts*. Boston: Harvard Business School Press.
105. Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal,* 13, 111–125.
106. Levinthal, D.A. & March, J.G. (1993). The Myopia of Learning. *Strategic Management Journal,* 14(2), 95-112.
107. Lin, C-H., Peng, C-H. and Kao, D.T. (2008). The innovativeness effect of market orientation and learning orientation on business performance. *International Journal of Manpower*, 29(8), 752–772.
108. Ling, Y., Simsek, Z., Lubatkin, M.H., & Veiga, J.F. (2008). Transformational leadership's role in promoting corporate entrepreneurship: examining the CEO-TMT interface. *Academy of Management Journal*, 51(3), 557–576.
109. Lloria, M.B. & Moreno-Luzon, M.D. (2014). Organizational learning: Proposal of an integrative scale and research instrument. *Journal of Business Research,* 67, 692-697.

110. Lumpkin, G.T. & Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review,* 21(1), 135–172.
111. Lumpkin, G.T., & Dess, G.G. (2001). Linking two dimensions of entrepreneurial orientation to firm performance: The moderating role of environment and industry life cycle. *Journal of Business Venturing,* 16(5), 429–451.
112. Luo, Y., Huang, Y., & Wang, S.L. (2012). Guanxi and organizational performance: A meta-analysis. *Management and Organization Review,* 8(1), 139–172.
113. Mintzberg, H. (1973). *The Nature of Managerial Work*. New York, NY: Harper & Row.
114. Malina, C. & Callahan, J.L. (2009). Fostering Organizational Performance: The Role of Learning and Intrapreneurship. *Journal of European Industrial Training,* 33(5), 388-400.
115. March, J.G. (1991). Exploration and Exploitation in Organizational Learning. *Organization Science,* 2, 71-87.
116. Martens, C.D.P., Lacerda, F.M., Belfort, A.C. & de Freitas, H.H.R. (2016). Research on entrepreneurial orientation: current status and future agenda. *International Journal of Entrepreneurial Behaviour & Research,* 22(4), 556-583.
117. Martín-Rojas, R., García-Morales, V.J., & García-Sánchez, E. (2011). The influence on corporate entrepreneurship of technological variables. *Industrial Management and Data Systems,* 111(7), 984–1005.
118. Martín-Rojas, R., García-Morales, V. J., & Bolívar-Ramos, M. T. (2013). Influence of technological support, skills and competencies, and learning on corporate entrepreneurship in European technology firms. *Technovation*, 33(12), 417-430.
119. Marinez-Leon, I.M. & Martinez-Garcia, J.A. (2011). The influence of organizational structure on organizational learning. *International Journal of Manpower,* 32(5/6), 537-566.
120. Matusik, F.S. (2002). An empirical investigation of firm public and private knowledge. *Strategic Management Journal*, 23, 457-467.
121. McFadzean, E., O'Loughlin, A. & Shaw, E. (2005). Corporate Entrepreneurship and Innovation Part 1: The Missing Link. *European Journal of Innovation Management,* 8(3), 350-372.
122. McGill, M.E. & Slocum, J.W. (1993). Unlearning the organization. *Organizational Dynamics,* 22(2), 67-79.
123. Migdadi, M.M. (2019). Organizational learning capability, innovation and firm performance. *European Journal of Innovation Management*.
124. Miller, D. & Friesen, P.H. (1978). Archetypes of strategy formulation. *Management Science,* 24(9), 921-933.
125. Miner, A.S. & Mezias, S.J. (1996). Ugly Duckling No More: Pasts and Futures of Organizational Learning Research. *Organisation Science,* 7, 88-99.
126. Mitchell, R., Smith, B., Seawright, K. & Morse, E. (2000). Cross-Cultural Cognitions and the Venture Creation Process. *Academy of Management Journal,* 43(5), 974-993.
127. Moingeon, B., & Edmondson, A. (1996). *Organizational Learning and Competitive Advantage*. London: Sage.
128. Morris, T. & Lancaster, Z. (2006). Translating Management Ideas. *Organization Studies,* 27(2), 207-233.
129. Morris, M.H. & Sexton, D.L. (1996). The Concept of Entrepreneurial Intensity, Implications for Company Performance. *Journal of Business Research*, 36(1), 5-13.
130. Moustaghfir, K. (2008), "The Dynamics of Knowledge Assets and their Link with Firm Performance", *Measuring Business Excellence*, 12(2).

131. Nemeth, L. (1997). *Measuring Organizational Learning*. National library of Canada, Ontario, Canada.
132. Nevis, E.C., DiBella, A.J., & Gould, J.M. (1995). Understanding organizations as learning systems. *Sloan Management Review*, Winter, 73-85.
133. Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5, 14–37.
134. Nonaka, I. & Takeuchi, H. (1995). *The knowledge-creating company.* New York, Oxford: Oxford University Press.
135. North, K., & Kumta, G. (2018). *Knowledge management: Value creation through organizational learning*. Gewerbestrasse: Springer.
136. O'Connor, G. & Rice, M. (2001). Opportunity Recognition and Breakthrough Innovation in Large Established Firms. *California Management Review,* 43(2), 95-116.
137. Farnese, M.L., Barbieri, B., Chirumbolo, A., & Patriotta, G. (2019). Managing Knowledge in Organizations: A Nonaka's SECI Model Operationalization. *Frontiers in Psychology*, 10: 2730.
138. Pedler, M., Burgoyne, J., & Boydell, T. (1997). *The learning company: a strategy for sustainable development*. McGraw-Hill: Maidenhead.
139. Peng, C.-H. (2008). The relationships between the antecedents of innovativeness and business performance. Paper presented in the *Proceedings of the International Symposium on Electronic Commerce and Security* (ISECS). Guangzhou, China.
140. Peruffo, E., Marchegiani, L. & Vicentini, F. (2018). Experience as a source of knowledge in divestiture decisions: emerging issues and knowledge management implications. *Journal of Knowledge Management*, 22(2), 344-361.
141. Pitkethly, R. (2001). Intellectual Property Strategy in Japanese and UK Companies: Patent Licensing Decisions and Learning Opportunities. *Research Policy,* 30(3), 425-442.
142. Phan, P., Wright, M., Ucbasaran, D., & Tan, W. (2009). Corporate entrepreneurship: Current research and future directions. *Journal of Business Venturing,* 24, 197-205.
143. Polanyi, M. (1958). *Personal Knowledge: Towards a Post-Critical Philosophy*. Chicago: University of Chicago Press.
144. Pollok, P., Lüttgens, D., & Piller, F.T. (2019). How Firms Develop Capabilities for Crowdsourcing to Increase Open Innovation Performance: The Interplay between Organizational Roles and Knowledge Processes. *Product Innovation Management*, 36(4), 412-441.
145. Popper, M. & Lipshitz, R. (2000). Organizational learning: mechanism, culture and feasibility. *Management Learning*, 31(2), 181-196.
146. Powell, J.D. & Bimmerle, C.F. (1980). A Model of Entrepreneurship: Moving Toward Precision and Complexity. *Journal of Small Business Management,* 18(1), 33-6.
147. Prahalad, C.K. & Hamel, G. (1990). *The Core Competence of the Corporation*. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship, Available at SSRN: https://ssrn.com/abstract=1505251.
148. Raisch, S. & Birkinshaw, J. (2008). Organizational Ambidexterity: Antecedents, Outcomes, and Moderators. *Journal of Management,* 34(3), 375-409.
149. Rajapathirana, R.P.J. & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, 3, 44-55.

150. Rauch, A., Wiklund, J., Lumpkin, G.T., & Frese, M. (2009). Entrepreneurial orientation and business performance: an assessment of past research and suggestions for the future. *Entrepreneurship: Theory and Practice,* 33, 761-787.
151. Real, J.C., Roldán, J.L. & Leal, A. (2014). From entrepreneurial orientation and learning orientation to business performance: analysing the mediating role of organizational learning and the moderating effects of organizational size. *British Journal of Management,* 25(2), 186-208.
152. Reed, R. and DeFillippi, R.J. (1990). Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review*, 34, 382-400.
153. Rhee, J., Park, T. & Lee, D.H. (2010). Drivers of innovativeness and performance for innovative SMEs in South Korea: mediation of learning orientation. *Technovation*, 30(1), 65–75.
154. Richard, P.J., Devinney, T.M., Yip, G.S., & Johnson, G. (2009). Measuring organizational performance: towards methodological best practice. *Journal of Management*, 35(3), 718-804.
155. Rousseva, R. (2011). Aspirations for Learning – a Missing Link between Technological Learning, Strategy and Entrepreneurship in Latecomer Companies. *Paper presented at the DIME Final Conference, 6-8 April 2011, Maastricht.*
156. Rucker, D.D., Preacher, K.J., Tormala, Z.L. & Petty, R.E. (2011). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, 5/6, 359-371.
157. Runciman, W., Williamson, J., Deakin, A., Benveniste, K., Bannon, K. & Hibbert, P. (2006). An integrated framework for safety, quality and risk management: an information and incident management system based on a universal patient safety classification. *Quality and Safety in Health Care*, 15(1), i82-i90.
158. Rutherford, M.W. & Holt, D.T. (2007). Corporate entrepreneurship, an empirical look at the innovates dimension and its antecedents. *Journal of Organizational Changes Management,* 20(3), 429-446.
159. Sadler-Smith, E. (2008). *Learning and Development for Managers: Perspectives from Research and Practice*. Malden: Blackwell Publishing.
160. Sadler-Smith, E., Spicer, D.P. & Chaston, I. (2001). Organisational Learning in Smaller Firms: An Empirical Perspective. *Long Range Planning,* 34, 139-158.
161. Salvato, C., Sciascia, S. & Alberti, F. (2004). The Role of Learning-Based Dynamic Capabilities in Corporate Entrepreneurship: the Case of an Established Firm. *Frontiers of Entrepreneurship Research,* 24.
162. Sanchez, R. (2005). *Tacit knowledge versus explicit knowledge approaches to knowledge management practice*. Department of Industrial Economics and Strategy, Copenhagen Business School.
163. Santos-Vinjande, M.L., Lopez-Sanchez, J.A., & Trespalacios, J.A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research,* 65(8), 1079-1089.
164. Santos, J.B. & Brito, L.A. (2012). Towards a Subjective Measurement Model for Firm Performance. *Brazilian Administration Review,* 9, 95-117.
165. Schuler, R.S. & Jackson, S.E. (2007). *Strategic human resource management: A reader.* 2nd ed. London Blackwell.
166. Sebora, T.C., Theerapatvong, T. & Lee, S.M. (2010). Corporate entrepreneurship in the face of changing competition: a case analysis of six Thai manufacturing firms. *Journal of Organizational Change*, 23(4), 453-70.
167. Senge, P.M. (1990). *The Fifth Discipline: the Art and Practice of the Learning Organization*. London: Doubleday.

168. Shane, S. & Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review,* 25, 217-226.
169. Shane, S., Locke, E.A. & Collins, C.J. (2003). Entrepreneurial Motivation. *Human Resource Management Review,* 13(2), 257-279.
170. Sharma, P. & Chrisman, J.J. (1999). Toward a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship. *Entrepreneurship: Theory and Practice*, Spring, 11-27.
171. Silverman, D. (2005). *Doing Qualitative Research*. 2nd ed. London: SAGE Publications.
172. Simonin, B.L. (2017). N-loop learning: part I – of hedgehog, fox, dodo bird and sphinx. *The Learning Organization*, 24(3), 169-179.
173. Slater, S. F. and Narver, J. C. (1995). Market orientation and learning orientation. *Journal of Marketing,* 59, 63-74.
174. Smart, D.T. & Conant, J.S. (1994). Entrepreneurial orientation, distinctive marketing competencies and organizational performance. *Journal of Applied Business Research,* 10(3), 28–38.
175. Smith, B.N., Montagno, R.V., & Kuzmenko, T.N. (2004). Transformational and servant leadership: Content and contextual comparisons. *Journal of Leadership & Organizational Studies (Baker College),* 10(4), 80-91.
176. Snell, R. & Chak, A. M.-K. (1998). The learning organization: Learning and empowerment for whom? *Management Learning*, 29(3), 337-364.
177. Soares, M.C. & Perin, M.G. (2020). Entrepreneurial orientation and firm performance: an updated meta-analysis. RAUSP Management Journal, 55(2), 143-159.
178. Spender, J.C. (2008). Organizational learning and knowledge management: Whence and Whither? *Management learning,* 39(2), 159-176.
179. Spicer, D.P. (2004). Organisational Learning and Performance SMEs. *Working paper No. 04/25, Bradford University School of Management*. University of Bradford: Bradford, October 2004.
180. Stevenson, H.H. & Jarillo, J.C. (1990). A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal,* 11, 17-27.
181. Stopford, J.M. & Baden-Fuller, C.W.F. (1994). Creating Corporate Entrepreneurship. *Strategic Management Journal,* 15, 521-536.
182. Swift, P.E. & Hwang, A. (2008). Learning, dynamic capabilities and operating routines: A consumer package goods company. *The Learning Organization*, 15(1), 75-95.
183. Tallon, P.P. (2008). Inside the Adaptive Enterprise: an Information Technology Capabilities Perspective on Business Process Agility. *Information Technology and Management,* 9(1), 21–36.
184. Teece, D.J. (1998). Capturing value from knowledge assets: The new economy, markets for know-how, and intangible assets. *California Management Review,* 40(3), 55-79.
185. Teece, D.J. (2007). Explicating Dynamic Capabilities: the Nature and Microfoundations of (Sustainable) Enterprise Performance. *Strategic Management Journal*, 28, 1319-1350.
186. Teece, D.J. (2012). Dynamic Capabilities: Routines Versus Entrepreneurial Action. *Journal of Management Studies,* 49(8), 1395-1401.
187. Teece, D.J. (2014). A Dynamic Capability-Based Entrepreneurial Theory of the Multinational Enterprise. *Journal of International Business Studies,* 45, 8-37.

188. Teece, D.J., Pisano, G. & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal,* 18(7), 509-533.
189. Van Grinsven, M. & Visser, M. (2011). Empowerment, Knowledge Conversion and Dimensions of Organizational Learning. *The Learning Organization,* 18(5), 378-391.
190. Van Wyk, R. & Adonisi, M. (2012). Antecedents of corporate entrepreneurship. *South African Journal of Business Management,* 43(3), 65-78.
191. Verschuren, P. & Doorewaard, H. (2010). *Designing a Research Project*. 2nd ed. Eleven International Publishing: The Hague.
192. Villiers-Scheepers, M.J. (2012). Antecedents of Strategic Corporate Entrepreneurship. *European Business Review,* 24(5), 400-424.
193. Virany, B., Tushman, M.L. & Romanelli, E. (1992). Executive Succession and Organization Outcomes in Turbulent Environments: An Organisation Learning Approach. *Organisation Science,* 3, 72-91.
194. Visser, M. (2007). Deutero-learning in organizations: a review and a reformulation. *Academy of Management Review*, 32(2), 659-667.
195. Vroom, V.H. (1964). *Work and motivation*. New York: Wiley.
196. Wang, C.L. (2008). Entrepreneurial orientation, learning orientation, and firm performance. *Entrepreneurship: Theory and Practice,* 32, 635–657.
197. Wang, C.L. & Ahmed, P.K. (2001). Creative quality and value innovation: a platform for competitive success. *Integrated Management Conference Proceedings of the 6th International Conference of ISO9000 and TQM*, Scotland, UK, April: 323-9.
198. Wang, C.L. & Chugh, H. (2014). Entrepreneurial Learning: Past Research and Future Challenges. *International Journal of Management Reviews,* 16, 24-61.
199. Wang, C.L. & Rafiq, M. (2009). Organizational Diversity and Shared Vision: Resolving the Paradox of Exploratory and Exploitative Learning. *European Journal of Innovation Management,* 12(1), 86-101.
200. Welter, F. & Smallbone, D. (2011). Institutional Perspectives on Entrepreneurship Behaviour in Challenging Environment. *Journal of Small Business Management,* 49(1), 107-125.
201. Wiklund, J. & Shepherd, D. (2005). Entrepreneurial Orientation and Small Business Performance: A Configurational Approach. *Journal of Business Venturing,* 20, 71-91.
202. Wolff, J.A., Pett, T.L. & Ring, J.K. (2015). Small firm growth as a function of both learning orientation and entrepreneurial orientation. *International Journal of Entrepreneurial Behaviour & Research*, 21(5), 79-730.
203. Wu, L-Y. (2007). Entrepreneurial Resources, Dynamic Capabilities and Start-up Performance of Taiwan's High-tech Firms. *Journal of Business Research,* 60, 549-555.
204. Wu, I.-L. & Chen, J.-L. (2014). Knowledge management driven firm performance: the roles of business process capabilities and organizational learning. *Journal of Knowledge Management,* 18(6), 1141–1164.
205. Yeo, R. (2003). Linking organisational learning to organisational performance and success: Singapore case studies. *Leadership & Organization Development Journal,* 24(2), 70–83.
206. Yuthas, K., Dillard, J. & Rogers, R. (2004). Beyond agency and structure: triple-loop learning. *Journal of Business Ethics*, 51(2), 229-243.
207. Zahra, S.A. (1993). Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. *Journal of Business Venturing,* 8(4), 319-340.

208. Zahra, S.A. (1996). Governance, ownership, and corporate entrepreneurship: The moderating impact of industry technological opportunities. *Academy of Management Journal*, 39(6), 1713-1735.
209. Zahra, S.A. (2008). The virtuous cycle of discovery and creation of entrepreneurial opportunities. *Strategic Entrepreneurship Journal*, 2, 243-257.
210. Zahra, S.A. & Covin, J.G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10(1), 43-58.
211. Zahra, S.A. & George, G. (2002). Absorptive capacity: a review, re-conceptualisation, and extension. *Academy of Management Review,* 27(2), 185-203.
212. Zahra, S.A. & Garvis, D.M.(2000). International corporate entrepreneurship and firm performance: The moderating effect of international environmental hostility. *Journal of Business Venturing*, 15(5), 469-492.
213. Zahra, S.A, Ireland, R.D. & Hitt, M.A. (2000). International Expansion by New Venture Firms: International Diversity, Mode of Market Entry, Technological Learning, and Performance. *The Academy of Management Journal,* 43(5), 925-950.
214. Zahra, S.A., Nielsen, A.P. & Bogner, W.C. (1999). Corporate entrepreneurship, knowledge, and competence development. *Entrepreneurship: Theory & Practice,* 23(3), 169-189.
215. Zahra, S.A., Sapienza, H.J. & Davidsson, P. (2006). Entrepreneurship and Dynamic Capabilities: A Review, Model and Research Agenda. *Journal of Management Studies,* 43(4), 917-955.
216. Zhou, W., Hu, H., & Shi, X. (2015). Does organizational learning lead to higher firm performance? An investigation of Chinese listing companies. *The Learning Organization,* 22(5).
217. Zhu, Ch., Liu, A., & Wang Y. (2019). "Integrating organizational learning with high-performance work system and entrepreneurial orientation: a moderated mediation framework. *Frontiers of Business research in China,* 13.
218. Zollo, M. & Winter, S.G. (2002). Deliberate Learning and the Evolution of Dynamic Capabilities. *Organization Science,* 13, 339-351.
219. Zott, C. (2003). Dynamic Capabilities and the Emergence of Intraindustry Differential Firm Performance: Insights from a Simulation Study. *Strategic Management Journal,* 24, 97-125.

APPENDICES

Hello,

I am a PhD Student at Kaunas University of Technology.
Currently, the survey on ability of companies to adapt to constantly changing conditions of business environment is being conducted. This research is supported by the Research Council of Lithuania. It is highly important that you answer the following questions since you got in among the respondents while selecting the respondents by the random sampling method.
This survey is completely anonymous, and all of your answers will only be used for generalised data analysis and scientific purposes.
How to fill the questionnaire in:
Answering the questions will be easy. In most cases, I will read you a question and possible answers to this question. You will have to choose the answer that is appropriate for you from the read ones.
If you have doubts over some questions, please ask, I will repeat them.
Thank you for taking part in this survey!

Start of interview:_____

Now I will list you various statements related with the ability of your company to recognise opportunities. Please rate their accuracy from 1 to 10. 'One' means that you strongly disagree with statement, while 'ten' means that you strongly agree with the statement. (*Read the statements. Tick the answer in the table. If the respondent does not know or cannot answer, tick the appropriate column).*

No.	Question	Strongly disagree		Disagree			Agree			Strongly agree		I do not know/cannot answer
1.	Enterprise orients to high finance value project even if they are risky	1	2	3	4	5	6	7	8	9	10	
2.	Enterprise takes bold strokes when looking for new opportunities	1	2	3	4	5	6	7	8	9	10	
3.	Enterprise is looking for new and original ideas	1	2	3	4	5	6	7	8	9	10	

Now I will list you various statements related with resources allocated by your company to innovations. Please rate their accuracy from 1 to 10. 'One' means that you strongly disagree with statement, while 'ten' means that you strongly agree with statement. (*Read the statements. Tick the answer in the table. If the respondent does not know or cannot answer, tick the appropriate column).*

No.	Question	Strongly disagree		Disagree			Agree			Strongly agree		I do not know/cannot answer
4.	Enterprise dedicates resources and funds to support innovation projects	1	2	3	4	5	6	7	8	9	10	
5.	Enterprise invests in research & development (R&D)	1	2	3	4	5	6	7	8	9	10	
6.	Enterprise funds experimental projects while realising that some of them will undoubtedly fail	1	2	3	4	5	6	7	8	9	10	
7.	Employees are encouraged to take calculated risks while implementing innovative ideas	1	2	3	4	5	6	7	8	9	10	

Now I will list you various statements related with the ability of your company to learn. Please rate their accuracy from 1 to 10. 'One' means that you strongly disagree with the statement, while 'ten' means that you strongly agree with the

statement. (*Read the statements. Tick the answer in the table. If the respondent does not know or cannot answer, tick the appropriate column).*

No.	Question	Strongly disagree		Disagree			Agree			Strongly agree		I do not know/cannot answer
8.	Enterprise perceives failure of the project as an opportunity for learning and improvement	1	2	3	4	5	6	7	8	9	10	
9.	There is a data base (or other tools) for storing the needed information and experience	1	2	3	4	5	6	7	8	9	10	
10.	Enterprise considers permanent learning (in various forms) as an important component of its work activities	1	2	3	4	5	6	7	8	9	10	
11.	The changes of the environment are hardly predictable in the industrial sector of the enterprise	1	2	3	4	5	6	7	8	9	10	
12.	Enterprise encourages employees to experiment and try various ways of learning	1	2	3	4	5	6	7	8	9	10	
13.	In order to reduce the risks of innovative projects, the enterprise encourages to learn from previous experience	1	2	3	4	5	6	7	8	9	10	
14.	Enterprise gives opportunities to use new knowledge and abilities	1	2	3	4	5	6	7	8	9	10	

P. **Now I will list you various statements related with your company's business achievements. Please rate their accuracy from 1 to 10. 'One' means that you strongly disagree with the statement, while 'ten' means that you strongly agree with the statement.** (*Read the statements. Tick the answer in the table. If the respondent does not know or cannot answer, tick the appropriate column).*

No.	Question	Strongly disagree		Disagree			Agree			Strongly agree		I do not know/cannot answer
15.	Sales of the enterprise rise faster than sales of its competitors	1	2	3	4	5	6	7	8	9	10	

16.	Our enterprise creates more products/services per year than its competitors	1	2	3	4	5	6	7	8	9	10
17.	The new products/services of our enterprise have better evaluation than the new products/services of its competitors.	1	2	3	4	5	6	7	8	9	10

18. How old did you get on your last birthday?
*(*WRITE IN)_____
19. Gender:
1. Male;
2. Female.
20. How many years have you been working as a manager?
(WRITE IN)_____
21. How many companies have you worked in as a manager?
(WRITE IN)_____

THESE ARE ALL THE QUESTIONS I WANTED TO ASK,
THANK YOU ONE MORE TIME!
PLEASE SPECIFY THE EXACT END TIME AND DATE OF INTERVIEW.

Interview end time_____. **Interview date**_____
Month, day
AFTER THE INTERVIEW, ENTER THE FOLLOWING DATA ABOUT THIS COMPANY FROM THE DATABASES:

Number of employees in the company:
(*write the number*)_____

Appendix 2. Interview data matrix

Table 1. Learning, knowledge and competitive performance of a firm across cases

Case	Learning and knowledge			Competitive firm performance	
	Application of new knowledge	Learning activities within the firm	Ways of transmitting experience within the firm	Sales of your company increase faster than sales of your competitors	Company introduces to the market more products/services than its competitors
Case A	Product	Planned; Regulated	Personal sharing	Yes	Yes
Case B	Performing the task	Planned	Formal meetings; personal sharing	No	No
Case C	Increasing efficiency	Planned	Formal meetings; personal sharing; storing	No	No
Case D	Filling the gaps	Planned; Limited	Formal meetings; Personal sharing	Yes	Yes
Case E	Common knowledge; Increasing efficiency	Planned; not planned	Personal sharing	No	No
Case F	Common knowledge	Planned	Formal meetings; Personal sharing	Yes	Yes
Case G	N/A	Not planned	Personal sharing	N/A	N/A
Case H	Performing the task	Not planned	N/A	Yes	Yes
Case J	Product	Not planned	Formal meetings; Personal sharing; trainings	No	Yes
Case K	Performing the task	Planned	Personal sharing	N/A	N/A
Case L	Common knowledge	Not planned	Personal sharing	Yes	Yes
Case M	Increasing efficiency	Planned	Formal meeting; training	No	Yes

Table 2. Entrepreneurial orientation and competitive firm performance across cases

Case	Entrepreneurial orientation							Competitive firm performance	
	Reasons for following new trends in technologies	Ways of following new trends in technologies	Share of budget for innovative projects development/ research	Type of funding for innovative projects development/ research	Motivators for employees' regular innovative idea development	Risk tolerance	Reasons for accepting/ not accepting risks	Sales of your company increase faster than sales of your competitors	Company introduces to the market more products/ services than its competitors
Case A	N/A	Exhibitions; suppliers	Increasing	Competitive third party funding	Nominating events; results	Calculated	Market	Yes	Yes
Case B	Adopting latest methods/ technologies; changes in regulatory mechanisms	N/A	Accommodating the needs; none	N/A	Results	Calculated	Legal aspects	No	No
Case C	N/A	Forming/ participating in interest groups	Low; varying	Indirect	Financial bonus; freedom to experiment; time; work efficiency	Calculated	Future perspectives; new competences	No	No
Case D	Adopting latest methods/ technologies	Forming/ participating in interest groups; Performing job duties	High	N/A	Financial bonus; opportunities for career	High	Resources	Yes	Yes
Case E	Adopting latest methods/ technologies	N/A	None; Varying	Indirect	Lack of motivators; opportunities for career; Work efficiency	High	Profits	No	No
Case F	Adopting latest	N/A	Low	Collaborations; indirect	Financial bonus; organizatio	High	Treating risk as an	Yes	Yes

Case	Entrepreneurial orientation							Competitive firm performance	
	methods/ technologies; gaining competitive advantage				nal culture; self-motivation		unavoidable element in business		
Case G	Adopting latest methods/ technologies; being in line with competitors	N/A	None	Indirect	Financial bonus; self-motivation	High	Process	N/A	N/A
Case H	Adopting latest methods/ technologies	Exhibitions	Moderated	Competitive third party funding; indirect	Financial bonus; opportunities to attend exhibitions; work efficiency	Calculated	Resources	Yes	Yes
Case J	Adopting latest methods/ technologies; improving product; reaching customers	N/A	Low	Indirect	Self-motivation	Calculated	Profits	No	Yes

Case	Entrepreneurial orientation							Competitive firm performance	
Case K	Product development	N/A	Low	Competitive third party funding; indirect	Financial bonus; opportunities to attend exhibitions;	High	Treating risk as an unavoidable element in business	N/A	N/A
Case L	Adopting latest methods/ technologies	Exhibitions	N/A	Competitive third party funding	Financial bonus	Limited	Resources	Yes	Yes
Case M	N/A	N/A	N/A	Indirect	Financial bonus; nominating events	Calculated	N/A	No	Yes

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