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Киреева Полина Сергеевна

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Влияние предпринимательской ориентации и управленческих инноваций на результаты деятельности бизнеса на примере финских компаний/
The Role of Entreprneurial Orientation and Management Innovation in Firm Performance: Evidence from Finnish Entreprises

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Научный руководитель:

Старший преподаватель кафедры стратегического

и международного менеджмента, ВШМ СПБГУ,

Богатырева Карина Александровна

Профессор, Международный бизнес

и предпринимательство, ЛУТ-университет,

Генри Хакала

Рецензент:

Доцент, Федеральное государственное автономное учреждение высшего образования

«Национальный исследовательский университет «Высшая школа экономики»

Кнатько Дмитрий Михайлович

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АННОТАЦИЯ

Автор работы: Киреева Полина Сергеевна, студентка 2го курса магистратуры, MiM, ВШМ СПБГУ

Научный руководитель: Богатырева Карина Александровна, старший преподаватель кафедры стратегического и международного менеджмента, ВШМ СПБГУ; Генри Хакала, профессор, Международный бизнес и предпринимательство, ЛУТ-университет

Наименование работы: Влияние предпринимательской ориентации и управленческих инноваций на результаты деятельности бизнеса на примере финских компаний

Ключевые слова: Предпринимательская ориентация, управленческие инновации, результаты деятельности компаний, моделирования структурных уравнений (SEM), медиация, модерация

В настоящее время компании активно внедряют новые практики и процессы в организации с целью повышения производительности, прибыльности и эффективности. Актуальность этих действий резко возросла, особенно в последнее время, в связи с пандемией коронавируса и полной изоляцией большинства городов. Данное исследование направлено на поиск правильной связи между управленческими инновациями, предпринимательской ориентацией и результатами деятельности фирмы.

В исследовании анализируются данные опроса 325 компаний, работающих в Финляндии, с использованием моделирования структурными уравнениями (SEM). Для изучения взаимосвязи между управленческими инновациями, предпринимательской ориентацией и результатами деятельности фирмы были рассмотрены две теоретические модели, в которых управленческие инновации выступают в качестве модератора и медиатора. Эти две модели были построены и проанализированы с помощью программного обеспечения SPSS AMOS. В результате было установлено, что (1) предпринимательская ориентация оказывает значительное положительное влияние на управленческие инновации; (2) управленческие инновации усиливают влияние предпринимательской ориентации на финансовые показатели деятельности фирмы; (3) управленческие инновации оказывают косвенное влияние на стратегические показатели и результаты деятельности компании в сравнении с конкурентами.

ABSTRACT

Author: Polina S. Kireeva, 2nd year Master's student, MiM, GSOM SPBU

Supervisor: Karina A. Bogatyreva, Senior Lecturer, Strategic and International Management Department, GSOM SPBU; Henri Hakala, Professor, International business and entrepreneurship, LUT University

Nowadays, companies actively implement new practices and processes within an organization in order to increase their productivity, profitability and efficiency. The relevance of this action has risen dramatically, especially in recent year due to the pandemic situation and totally lockdown of most of the cities. This research aims to find the proper link between management innovation, entrepreneurial orientation, and firm performance.

This research analyses survey data from examining 325 companies operating in Finland using structural equation modelling (SEM). In order to investigate the relationship between management innovation, entrepreneurial orientation and firm performance, we consider two theoretical frameworks that indicated management innovation as a moderator and a mediator in the model. These two models were tested via SPSS AMOS software. As a result, we revealed that (1) entrepreneurial orientation has a positive significant influence on management innovation; (2) management innovation strengthens the influence of entrepreneurial orientation on financial performance; (3) management innovation has an indirect effect on strategic performance and performance against competitors.

LIST OF ABBREVEATIONS

EO – Entrepreneurial orientation

EOI – Innovativeness (EO's dimension)

EOCA – Competitive aggressiveness (EO's dimension)

EOFRT – Firm risk taking (EO's dimension)

EOMP – Market proactiveness (EO's dimension)

FP – Firm performance

FPS – Financial Performance

MI – Management innovation

PACSI – Performance against competitors

SEM – Structural equation modelling

SA – Subsidiary autonomy (EO's dimension)

SP – Strategic performance

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1. INTRODUCTION

Modern, rapidly changing markets require rapid and high-quality innovations in the management process. More and more companies are now moving to self-managing teams, home offices, introducing modern technologies into team-management communications, and moving away from traditional organisational structures. In this term, the importance of management innovations within a company becomes more significant and needs closer investigation.

Management innovation is a term used to measure the significant new change in the organisational practices, directed to the organisational aims, strategy and decision making results (Hecker and Ganter, 2013). The term refers to the implementation of novel managerial practices, processes and procedures, such as implementing remote work, modern technologies for efficient communication within an organisation, and self-managing teams. Indeed, many companies nowadays try to move away from traditional organisational structures and processes to novel one in order to increase both motivation and productivity among employees. For example, self-managing teams are authorized to make decisions on the workplace autonomously, thus, they usually combine skills and experience of all the teammates to improve the project or product, change trajectory, or monitor deviations. It significantly differs from the traditional managerial hierarchy, in which manager has to get alignments from different departments in order to finish a project and spend much time to do that.

Besides, in term of pandemic coronavirus implementing new management processes become a need in many organisations: due to strong governmental restrictions companies had to shift to completely or partially remote work and search for other opportunities to operate efficiently despite the epidemiological situation. Despite this shifting was necessary, It lead to many advantages for companies, such as increased productivity. Indeed, as employees are working from home they have more time, more flexible schedule and less distractions from working process. Companies at the same time reduce the costs, for example on office rent or overhead, and focus on the profit improvement.

Although the term management innovation exists for a relatively long period, the number of studies dedicated to this topic is limited. Besides, most of the studies provide theoretical models and contributions rather than practical research based on the particular data. However, quantitative studies usually test the models with management innovation mainly based on either a small sample or a specific set of observations. For example, the research introduced by Mol and Birkinshaw

(2009) includes only large companies operating in Great Britain. Thus, in order to check the stability of these findings, the stated hypotheses could be tested on a larger or significantly different sample: companies operating in different regions, industries, or small and medium enterprises.

From the strategic management perspective it is highly important to understand how implementing of new different practises in organisations affects firm performance in various ways: for instance, directly and indirectly. Although, firm performance refers to traditional quantitative approaches to measure organisational performance measurement, last decades provide a high attention to the development and measurement of both financial and non-financial performance, that used for monitoring and reporting the business performance (Otley, 2002). The incentive for these research directions comes from bottom and the top of the organization. From the one hand, financial indicators are inevitable in more senior levels, since they provide basic information about companies' performance: profits, sales, sales growth, and others. Indeed, any companies both public and private have to exist within financial constraints in order to deliver the information about a particular company to its stakeholders.

At the same time, operational levels requires to measure the firm performance via non-financial indicators. Indeed, recent research also highlight increasing recognition of others factors (mostly of non-financial indicators), which help to evaluate performance in a more efficient way and drive future business performance. In this term, the following factors could be used to measure a firm performance (Otley, 2002): market share, productivity, product leadership, personnel development, employee attitudes, public responsibility. Thus, different sets of non-financial measures could be used regarding the different industries and company's specific. However, it becomes clear now that these indicators are the necessary part to more accurate measure the firm performance.

More than that, management innovation relates to a firm-level entrepreneurship: the role of introducing new practices and processes for development innovations, economic growth and organisation efficiency was previously considered by Schumpeter (1934, 1943) and developed by Walker et al. (2015). However, these studies considered this relationship only from theoretical perspective, without practical evidence of this phenomena. Besides, new reality (due to worldwide pandemic) requires from companies to change their organisations and implement new practices, which once again highlights increased relevance and necessity of management innovation. Therefore, the link between management innovation and entrepreneurship remains a research area that has not been fully explored, which requires further development. This study tries to find a

proper connection between EO and MI and investigate their influence on firm performance measurements.

Therefore, taking into account previous literature, we found out that: (1) management innovation could lead to a higher firm performance, (2) firm-level entrepreneurship and management innovation are connected, and (3) it is crucial to add both financial and non-financial factors to measure the firm performance.

1.1. Problem Statement

As modern companies try to improve efficiency and increase their influence and performance in the market by introducing novelties and changes within the company, management innovation requires closer examination, especially in entrepreneurship studies. Therefore, the research gap needs an increased understanding of the links between management innovation and firm-level entrepreneurship, and it's influence on firm performance.

The research is dedicated to the investigation of management innovation, its influence on firm performance and entrepreneurial orientation. The study's primary goal is to reveal and specify a connection between management innovation, entrepreneurial orientation, and firm performance. Thus, the research questions are: (1) What is management innovation's role in the relationship between entrepreneurial orientation and firm performance? (2) What impact does bring management innovation on entrepreneurial orientation and firm performance?

1.2. Empirical research strategy

In order to investigate the research questions stated above we will use data collected in the research project. Data were collected through an online survey among the managers working in companies operating in Finland from January until March 2014. As a result, the sample consists of 325 firms, operated in different industries and related to various sizes: medium, large and very large companies.

The data includes the following constructs: entrepreneurial orientation (innovativeness, firm risk-taking, competitive aggressiveness, autonomy, and market proactiveness), management innovation and firm performance measurements (financial and strategic performance, performance against competitors). All of the mentioned constructs are first-orders, except entrepreneurial orientation, which is presented as a second-order construct with five-dimensions according to Lumpkin and Dess (1996).

In order to determine the role of management innovation in the relationship between entrepreneurial orientation and firm performance we will consider two theoretical frameworks indicated MI as a moderator and a mediator in the model. Thus, the research provides estimations of two different models illustrated this connection.

1.3. Research Methodology

To analyse the stated model and test the hypotheses we will use structural equation modelling (SEM), which is assessed from the confirmatory factor analysis (CFA). Confirmatory factor analysis (CFA) is directed to test the latent constructs' hypothesis. However, the structure of latent constructs must be built from the theoretical perspective regarding the related topic (Hair et al., 2010).

However, before the hypotheses testing we have to analyse data and make validity and reliability analysis. Construct validity assumes to test convergent and discriminant validity (Fornell and Larcker, 1981). In addition, reliability is also a necessary part for measurement: it relates to consistency of the results. The validity includes both construct and composite reliability. These tests are obligatory requirements to get accountable data and will be presented in chapter 6 in more details.

1.4. Definitions

Entrepreneurial orientation – the degree to which existing firms consider themselves entrepreneurial. Entrepreneurial firms are defined as those that exhibit innovativeness (presenting new products, processes, and business models), proactiveness (actively entering new products/markets and seeking market leadership positions), and risk-taking (a willingness among strategic decision-makers to contribute resources to projects with uncertain outcomes) (Miller, 2011; Covin and Slevin, 1986).

Innovativeness (Entrepreneurial orientation's dimension) – organisation's willingness to support implementation of new ideas, novelty, creative experimentation and processes which lead to new products, services and technological processes (Lumpkin and Dess, 1996).

Risk-taking (Entrepreneurial orientation's dimension) – processes focused on anticipating and responding to future needs by seeking new opportunities that may or may not be related to the current direction of the business, introducing new products ahead of competitors, and strategically eliminating operations that are on a mature or declining stage (Venkatraman, 1989).

Autonomy (Entrepreneurial orientation's dimension) – actions taken by a person or a group of people within a firm without stifling organisational restrictions to achieve or implement a particular initiative (Lumpkin and Dess, 1996).

Proactiveness (Entrepreneurial orientation's dimension) – a set of processes that focuse on anticipating and responding to future needs by seeking new opportunities that may or may not be related to the current direction of the business, introducing new products ahead of competitors, and strategically eliminating operations that are on a mature or declining stage (Venkatraman, 1989).

Competitive aggressiveness (Entrepreneurial orientation's dimension) – the willingness of a company to directly and actively challenge its competitors to succeed in a market entry or outperform industry competitors in the market (Lumpkin and Dess, 1996).

Management innovation – invention and implementation of innovative management practices, processes, and structures to achieve organisational goals (Birkinshaw et al., 2008).

1.5. Delimitations

This study examines the relationship between entrepreneurial orientation, management innovation and firm performance measurements investigated the sample included firms operated in Finland. Thus, the results given in this study reflect how management innovation and entrepreneurial influence on firm performance measurements in a particular geographical scope.

Besides, we do not estimate how the results provided in this study differ depending on different industries and firm size. However, it could be considered as possible future research directions.

1.6. Research structure

As we have already stated previously, the aim of this research is to find a proper model indicated the relationship between EO, MI and firm performance. Therefore, we have to consider the term of entrepreneurial orientation, management innovation and firm performance separately and investigate their interpretation in previous studies. After that, we should examine the relationship between these three constructs in order to find a proper theoretical framework for hypotheses testing. Thus, the structure of the paper is the following:

- The literature review consisted of four key blocks: entrepreneurial orientation, firm performance, management innovation and the relationship between the constructs.

- The research design included theoretical frameworks, stated hypotheses, data collection and analysis, methodology of the study, validity and reliability of the given constructs.

- The results of testing models.

- Discussions, conclusions and possible future research directions.

2. ENTREPRENEURIAL ORIENTATION

Entrepreneurship is a discovery, evaluation, and exploitation of opportunities, or in other words, the creation of new products, services, or production processes (Shane and Venkataraman, 2000). It consists of strategy development, organisation, new area and entrepreneurship ideas. Entrepreneurship is a crucial component of society's success today because of its contributions to economic growth, job creation and technological progress (Obschonka et al., 2017).

Firm-level entrepreneurship or corporate entrepreneurship enables organisations to explore and implement new activities and ways of doing business (Hayton and Kelley, 2006). The term suggests processes used to improve competitive positioning and reshape corporations, markets, and industries as they develop and exploit opportunities to create value through innovation (Covin and Miles, 1999).

Entrepreneurial organisations are more prone to innovations and risk. Indeed, firms with entrepreneurial tendencies generate a solid incentive to innovate, take risks and actively exploit new venture capital opportunities (Dess and Lumpkin, 2005). This entrepreneurial incentive is known as entrepreneurial orientation.

This chapter introduces the entrepreneurial orientation term as one of the most often used constructs to measure firm-level entrepreneurship. After that, we discuss and consider dimensions of entrepreneurial orientation: autonomy, risk-taking, proactiveness, competitive aggressiveness and innovativeness.

2.1. The term of entrepreneurial orientation

Entrepreneurial orientation (EO) describes the degree to which existing firms consider themselves entrepreneurial. Entrepreneurial firms are defined as those that exhibit innovativeness (presenting new products, processes, and business models), proactiveness (actively entering new products/markets and seeking market leadership positions), and risk-taking (a willingness among strategic decision-makers to contribute resources to projects with uncertain outcomes) (Miller, 2011; Covin and Slevin, 1986). It is claimed that "the argument is that entrepreneurial firms do not simply create; entrepreneurial firms create with the intent of employing those creations to establish market leadership positions, to develop new markets, and to pre-empt competitors..." (Anderson et al., 2015).

2.2. Dimensions of entrepreneurial orientation

For the purposes of this research, we consider the multi-dimensional construct of entrepreneurial orientation elaborated by Lumpkin and Dess (1996), which includes risk-taking, proactiveness, competitive aggressiveness and innovativeness. It allows studying a more comprehensive range of dimensions of entrepreneurship that may affect firm performance.

Although each of the dimensions is necessary for entrepreneurial orientation, they could vary autonomously depending on the given context. Thus, we develop hypotheses that apply to the level of overall entrepreneurial orientation as a whole. Each of the dimensions will be considered one by one in paragraphs 2.2.1 – 2.2.5.

2.2.1. Autonomy

Autonomy refers to a person's independent actions or a group of people to achieve or implement a particular initiative. It means the ability and willingness to self-managing in order to seek opportunities. In organisational terms, it refers to actions taken without stifling organisational restrictions (Lumpkin and Dess, 1996).

The idea of autonomy is a crucial aspect of entrepreneurial orientation. Indeed, from a historical perspective, entrepreneurship has flourished because independent individuals have chosen to drive new ideas or enter new markets rather than allow organisational constraints and processes to hinder them. Thus, an independent spirit is necessary for a person or group of people to be entrepreneurial within an organisation.

Organisations that grant autonomy to their employees demonstrate a belief in their ability to initiate, make decisions, act independently by empowering and providing open communication, unrestricted access to information, and the power to think and act without interfering with (Spreitzer, 1995). It may represent the entrepreneur's centralised authority in small firms, who can act autonomously to run or manage the business (Vora et al., 2012).

2.2.2. Risk-taking

Risk-taking is a major factor that distinguishes entrepreneurs from employees due to the acceptance of uncertainty and the riskiness of self-employment. Thus, the concept of risk-taking is a factor that is commonly used to describe entrepreneurship.

Risk can come in many forms: strategic risks, which involve exploring the unknown, that is risking a large portion of the firm's assets for an initiative or large loans (Baird and Thomas 1985); and managers' propensity to pursue proven paths and projects for which the expected return is clear (Venkatraman,1989). Risk-taking is the firm's propensity to invest resources in projects, activities and decisions whose outcomes are uncertain (Lumpkin and Dess, 1996). However, risk-taking organisations can be more productive (Wales et al., 2011; Kreiser and Davis, 2010) because firms abandon established procedures and traditions favouring exploring new opportunities (Busenitz and Barney, 1997). Conversely, because risk-averse firms are passive and inactive, they may experience significant productivity declines, which is a sizeable disadvantage in a rapidly changing environment.

2.2.3. Proactiveness

Proactiveness reflects the idea that entrepreneurial effort requires initiative (Vora et al., 2012). Proactiveness is a set of processes focused on anticipating and responding to future needs by seeking new opportunities that may or may not be related to the current direction of the business, introducing new products ahead of competitors, and strategically eliminating operations that are on a mature or declining stage (Venkatraman, 1989). It means that organisations try to find new opportunities, even if they are not related to existing operations. Firms that are proactive identify and exploit opportunities to meet demand through their innovation, adopting existing products or services, or entering new markets with existing products or services (Vora et al., 2012).

In order to clarify the context of proactivity, Lumpkin and Dess (1996) consider a continuum of proactivity: passivity (the opposite concept of reactivity), which means inactivity or

inability to capture opportunities or lead in the market, and responsiveness, a concept that assumes responding to competitors' actions. It is also consistent with earlier works that claim that an organisation should be both proactive and responsive in its environment in terms of technology and innovation, competition, customers and shaping the environment to its advantage, as responsiveness implies the ability to adapt to challenges from competitors (Chen and Hambrick, 1995). Thus, EO involves both being proactive in seeking out opportunities and being willing to be aggressive in responding to competitors.

2.2.4. Competitive aggressiveness

An assertive stance and intense rivalry are crucial to the survival and success of new entrants to the market because new enterprises have a much higher probability of failure than existing ones. Therefore, another dimension of entrepreneurship that is often discussed in the literature is competitive aggressiveness.

Competitive aggressiveness means the willingness of a firm to directly and actively challenge its competitors to succeed in a market entry or outperform industry competitors in the market (Lumpkin and Dess, 1996). Competitive aggressiveness is characterised by reactivity, which can even be a direct confrontation. For instance, a firm enters a new market or lowers prices in response to competitors' actions. This concept also represents a willingness to act creatively or unusually rather than rely on traditional competition methods.

2.2.5. Innovativeness

Innovativeness refers to an organisation's commitment to supporting new ideas, novelty, creative experimentation and processes that lead to new products, services and technological processes (Lumpkin and Dess, 1996). Moreover, many studies highlight the positive impact of innovativeness on a firm's productivity (Wales et al., 2011; Kreiser and Davis, 2010; Calantone et al., 2002).

The term of firm innovativeness can be presented in different forms. Innovativeness can manifest itself continuously and range from introducing a new product line or experimentation with product promotion to a desire to develop cutting-edge products or technology (Lumpkin and Dess, 1996). While innovation can differ in the degree of radicality (Hage, 1980), innovativeness reflects essential willingness to shift away from existing technologies or practices and move beyond the current technology level (Kimberly, 1981).

Therefore, we can conclude that innovativeness plays a significant role in the expansion and renewal of products and services, the organisation's internal processes, strategic planning, and the firm's technological leadership. Thus, it can be stated that innovativeness's advantages are a necessary condition for maintaining a firm's competitive advantage.

3. MANAGEMENT INNOVATION

The innovation phenomenon continues to attract more scholars for studying. Recent interest has got not only "traditional" topics such as product and technical innovations and service and process innovations. However, in this study, we focus on management innovation, which means implementation of novel practices to develop the company in a sufficient way. According to Hamel (2006), management innovation could be a significant competitive advantage, allowing companies to be more efficient and productive on the market than their key competitors.

First of all, this section includes a definition and explanation of "management innovation". It also provides discussions about its importance for an organisation. Secondly, the section considers antecedents and outcomes that affected the management innovation.

3.1. The term of management innovation

Management innovation is a relatively new topic of research, which become more prevalent in the 2010s. The term means switching from traditional management practices and processes to more novel principles, which significantly redefines management work. Management innovation assumes invention and implementation of innovative management practices, processes, and structures to achieve organisational goals (Birkinshaw et al., 2008). In other words, management innovation reconsiders how the managers do what they do during setting organisational goals and the decision-making process. As an example of management innovation, we could consider self-managed teams, which assume the introduction of teams responsible for their functioning, decision-making and setting the goals and priorities (Bunderson and Boumgarden, 2010).

Management practices mean what managers do as part of their everyday routine – setting goals and related procedures, arranging tasks, developing talents, and meeting the different stakeholders' demands and expectations (Mol and Birkinshaw, 2009). Management processes are the routine that governs managers' work directing to the turning abstract ideas into actionable tools, including strategic planning, project management, and performance assessment (Vaccaro et al., 2012; Birkinshaw et al., 2008).

The term management innovation includes processes, methods and practices (Geber, 2011). Innovation in management leads to creating new practices, which means that this practice genuinely original or gradual change of what already exists (Gebauer et al., 2017). Also, Mol and Birkinshaw (2009) share management innovation for the practice new to the state of the art and adoptive management innovation, something that is adopted from another context.

Management innovations are constantly implemented in the working process (Birkinshaw and Mol, 2006). However, some of them does not provide significant benefits for organisations, though they could be reduced later. Over time some valuable management innovations are copied and adopted by another organisation and spread across different countries and industries.

Most companies consider management innovation a gradual process; however, it could vary depending on its specifics. In order to build a continual and systematic breakthrough Hamel (2006) defines critical elements of management innovations:

- Reflection on the high-level managerial problem;

- Modern principles dedicated to the new approaches;

- Elimination of outdated management;

- Similarity to the typical firms that alert what possible.

The first element assumes that the bigger the problem organisation has, the more likely for innovation. Indeed, in order to contribute to the management innovation, a firm has to identify the primary pain needed to solve.

Finding new management principles is necessary for a company to solve significant, persistent, and all-pervading problems. The reason is that most old-fashioned managerial approaches seem to be useless and inefficient for achieving current organisational objectives and using them in the decision-making process.

In order to ultimately realise new management principles, a company has to reconsider its working processes and outdated approaches. A firm could identify and uncover management orthodoxy, for example, by creating a list of new beliefs about some critical managerial topics together with the employees.

The last element is about finding new unlikely analogies offering new ways of solving complex managerial problems. Indeed, everyday companies make various questionable and

potentially unsuccessful decisions which later could cost billions of dollars. In order to meet investor expectations, firms could try to search for the case analogies helping to find an excellent appropriate solution.

Implementation of novel management approaches into an organisational process is a fundamental issue for firms. It could improve their productivity, product quality, customer service, and competitiveness (Ichniowski et al., 1995).

3.2. Drivers of management innovation

Recent studies dedicated to management innovation direct mostly on conceptual rather than an empirical explanation of significance and ascendants of management innovation (Khosravi et al., 2019), or consider research based on small samples (Damanpour and Aravind, 2012).

The systematic analysis of Khosravi et al. (2019) shows the drivers and outcomes of management innovation from the existed literature review dedicated to this topic. Among the drivers, authors divide the following factors: organisational, managerial, environmental and attributes of innovations. The drivers are discussed in subsections 3.2.1 – 3.2.4.

3.2.1. Organisational drivers

Organisational antecedents define the ability of innovation's adoption. These factors refer to the structure, education and culture of the firm. Organisational factors could be defined as crucial antecedents contributing to the innovations because the existing capacities of a firm aiming to attract more resources are limiting the innovation options (Damanpour and Aravind, 2012). These antecedents are divided into (Khosravi et al., 2019):

(1) Organisational structure and strategy (including organisational policy, complexity, standardisation),

(2) Knowledge management (for example, organisational learning and memory),

(3) HRM (including HR practices, employee capability),

(4) Dynamic capabilities (consisting of integrative, sensing capability and manufacturing flexibility),

(5) Networks (including market network, partnership, and relational capability),

(6) Organisational size,

(7) Organisational culture/ climate (for instance, firm's internal context and innovative culture),

(8) Organisational resources (for example, IT systems/software and people).

Prior research has investigated organisational size (the more prominent is a firm – the higher is the level of management principles introducing), employees education (the more highly trained workers of a company – the higher is the level of management principles introducing) and geographic scope (the more expansive is geographic coverage of a firm – the more likely management innovations are implemented as the antecedent of management innovation (Mol and Birkinshaw, 2009). In addition, to the direct effect of organisational size on management innovation, researchers also study indirect (moderation) effect (Khosravi et al., 2019). However, they have not considered entrepreneurial orientation as one of the potential antecedent, yet these two constructs are closely dependent and could positively effect on each other (Schumpeter, 1934, 1943; Walker et al., 2015).

3.2.2. Managerial drivers

Several theories support the importance of managerial drivers for management innovation. For instance, Hambrick and Mason (1984) used the upper echelon perspective to analyse the relationship between managers' characteristics and form's innovation and performance. According to this theory, managers' characteristics and behaviour could significantly affect the decision-making process. Taking into account upper echelon theory, Khosravi et al. (2019) define three categories of manager's ability for innovation:

- Leadership behaviour (transformational, transactional, strategic and relentless leadership);

- Characteristics and attitude (managers' education, attitude toward innovation, tenure, and personality traits);

- Stewardship (top management support, involvement and commitment).

Different leadership behaviour of managers could contribute to the implementation of new innovative management practices and processes. Recent research has proved and confirmed the positive relationship between transformational/transactional leadership and management innovation (Vaccaro et al., 2012).

Personal characteristics refer to the particular managers' traits, attitude and educational level. According to Khosravi et al. (2019), top managers' characteristics and education positively affect how the organisational climate contribute to innovation.

Stewardship refers to the organisational actions overall which managers have to do: for example, influence on organisational culture, building capacity for change, controlling the resources and affecting the decision-making process (Khosravi et al., 2019; Wong, 2013).

3.2.3. Environmental drivers

Environmental factors relate to the external environment, market or sector where the organisation is operating. The importance of environmental antecedents is defined by the theory of complexity, which assumes that organisations are dynamic systems that use vitality and dynamism form their environment (Khosravi et al., 2019).

According to Khosravi et al. (2019), there are ten factors related to environmental drivers, which are divided into three following categories:

- Market dynamics (competitive pressure, rapid technology changes, uncertainty, environmental dynamism, and market concentration);

- Political and legal (local legal environment, government effectiveness, presence of union);

- People/communities (community wealth and population growth).

The most well studied environmental category is market dynamics, which determine dynamics and changes between market factors that appeared due to constant supply and demand changes.

3.3. Outcomes of management innovation

The number of studies dedicated to the relationship between management innovation and outcomes is significantly low. Among the outcomes of management innovation, according to Khosravi et al. (2019), could be divided into performance, innovation and capabilities.

Performance outcomes measure the ability of an organisation to compete and perform well. This ability significantly depends on management innovation through a resource-based perspective (Damanpour et al., 2009; Mol and Birkinshaw, 2009). The relationship between a firm's performance and management innovation will be lightened in section 5 in more details. Among

the innovation outcomes of MI's positive influence, the researchers highlight technology, process and product innovation (Khosravi et al., 2019).

Capabilities outcomes represent the third category of MI outcomes. According to the previous research, management innovation contributes to an organisation's dynamic capabilities and enhancement (De Souza Bermejo et al., 2016). In these terms, dynamic capabilities mean capabilities to determine and eliminate opportunities and threats and the ability to identify the necessity for changes and find a proper solution (Teece, 2007).

4. FIRM PERFORMANCE

Firm performance is one of the most crucial parts of strategic management research (Bettis et al., 2016). Performance is the final measure of organizational output and is a subject of market contingencies and organizational conditions (Evan, 1976). This term is determined as a multi-faceted phenomenon, covered different periods (for example, short- and long-term), involved different points of view (employees and shareholders), and criteria (Snow and Hrebiniak, 1980). In this term, the conceptualisation illustrated different approaches to measure the firm performance was elaborated (Venkatraman and Ramanujam, 1986). According to the classificatory scheme there are three types of performance:

- Financial performance, an outcome-based performance measurement, which could be described as the "narrowest conception of business performance" (Venkatraman and Ramanujam, 1986);

- Business performance, a broader concept of performance, which includes both financial and operational dimensions of performance. Operational factors could include for example product-market outcomes: market share, marketing effectiveness and introduction of new products (Gerschewski and Xiao, 2015);

- Organisational effectiveness, the broadest concept of performance. The factors that could be used to measure organisational effectiveness includes firm's survival, reputation, perceived overall performance (Hult et al., 2008).

The last concept was not broadly highlighted previously in the literature due to difficulty in measuring effectiveness (Venkatraman and Ramanujam, 1986). Therefore, research in strategic management and international business are mostly concentrated on financial and operational performance. Indeed, most of previous research used only financial indicators, such as revenue

and ROA, in order to measure the construct of firm performance; however, considering only financial measures is not enough to capture overall firm performance. Therefore, some researchers use the combination of financial and non-financial values (Haber and Reichel, 2005). Non-financial measures may consider anticipated market share, anticipated sales growth, customer satisfaction, and loyalty (Clark, 1999; Haber & Reichel, 2005). Thus, this chapter aims to examine both financial and non-financial indicators to present the firm's fulfilment view.

Besides, there is another approach that focuses on internal and external measures. In this term, internal measures refer to the interests of stakeholders within the firm, while external measures depend on customers, suppliers, competitors and other market indicators (Aggarwal and Gupta, 2006; Haber and Reichel, 2005).

In addition, according to Venkatraman and Ramanujam (1986) stated that different conceptualizations (for instance, financial and organizational) should not be considered in one construct. As a result, these dimensions have to be recognized and examined separately from one another. This study is directed to test explicitly the following performance measurements: financial, strategic performance, and performance against competitors, which will be presented in more details in subsections 4.1 – 4.3.

4.1. Financial Performance

It is assumed that financial performance reflects how company affects the organizational goals. Thus, financial performance could be measured for example through a profitability: return on investment (ROI), sales growth, and earnings per share (EPS) (Gerschewski and Xiao, 2015).

Financial performance usually is measured with a four-dimensional construct, including the following firm performance indicators from the previous year: average annual sale growth, market share growth, profit growth, and capital return growth (Wiklund and Shepherd, 2005; Kellermanns et al., 2012).

4.2. Strategic Performance

Strategic performance refers to non-financial indicators of performance. According to Ittner et al. (2003) strategic performance measurement could be defined as a system translated business strategies into deliverable results. In this term, strategic performance measurement could include operational and strategic measures.

According to Schilke (2014) strategic performance is one of the measurements to evaluate competitive advantage of the firm. Thus, it is proposed to measure the strategic performance used the following estimates:

- We have gained strategic advantages over our competitors.

- We have a large market share.

- Overall, we are more successful than our major competitors.

4.3. Performance against competitors

Performance against competitors mostly relates to the organizational effectiveness, as it assumes to measure the firm's position in comparison with market average. According to Schilke (2014) performance against competitors could be measured with the following dimensions:

- Our EBIT (earnings before interest and taxes) is continuously above industry average.

- Our ROI (return on investment) is continuously above industry average.

- Our ROS (return on sales) is continuously above industry average.

5. RELATIONSHIP BETWEEN EO, MI AND FIRM PERFORMANCE

The following paragraphs emphasise the relationship between entrepreneurial orientation constructs, management innovation, and firm performance to state the hypotheses that are tested in this research. Thus, the goal of this sections is to find the proper model fit from a theoretical perspective.

5.1. Entrepreneurial orientation and firm performance

Though some factors related to performance in a meaningful way, it is accepted that entrepreneurial behaviour is a significant predictor of performance within and between firms (Rauch et al., 2009). Indeed, previous research highlighted that entrepreneurial orientation positively influences performance (Wiklund and Shepherd, 2005). Rauch et al. (2009) has confirmed a positive relationship of EO with organisational performance. In other words, it means that by pursuing entrepreneurial orientation, existing organisations are more likely to achieve positive results than those that do not rely on innovation, proactiveness and risk-taking (three primary constructs of EO). As Anderson et al. (2015) note, entrepreneurial orientation represents

one of the most important constructs in strategic entrepreneurship research, albeit with many open questions about dimensions, measurement model, and whether the construct is attitudinal, behavioural, or both.

While making and introducing new products and technologies, innovative companies can generate high economic performance and have been seen as the driver of economic growth (Schumpeter, 1934). Proactive firms can create a competitive advantage, target premium market segments, charge high prices, and penetrate the market ahead of the competition (Zahra and Covin, 1995). These companies can control the market with the help of dominating distribution channels and establishing brand recognition. Simultaneously, there is research claiming that though tried strategies can lead to higher performance, risky strategies lead to more considerable performance variation. It could be achieved by risk diversification: some company's projects fail while others succeed. This strategy may be more profitable in the long term (March, 1991; McGrath, 2001).

Taking all the conclusions considered above into account, we could state that although previous papers suggested that entrepreneurial orientation has a positive effect on firm performance, these studies usually measure only financial performance in order to test this influence. This research assumes that entrepreneurial orientation could have a significant positive influence on performance against competitors and strategic performance as well:

H1(a): Entrepreneurial orientation has a positive influence on financial performance.

H1(b): Entrepreneurial orientation has a positive influence on performance against competitors.

H1(c): Entrepreneurial orientation has a positive influence on strategic performance.

The hypotheses stated above are partially confirmed from the previous studies: particularly, positive influence of EO on firm performance and the combination of financial and non-financial indicators. However, since performance measurements should be included separately in the model according to Venkatraman and Ramanujam (1986), we test the hypotheses H1(a), H1(b), and H1(c) in this research.

5.2. Moderation effect of management innovation

The results of the studies about management innovation and firm performance are controversial. Indeed, several scientists claim that implementing new approaches and practices into organisational process positively affect only on reputation or brand of the company rather than

on financial indicators (Staw and Epstein, 2000). At the same time, according to Atalay et al. (2013) while both product and process innovations significantly and positively affects firm performance, there is no such relationship between non-technological innovations (for instance, organizational and marketing innovation) and firm performance. The opposite, Walker et al. (2015) claimed that there are "no differences in the direction and the strength of the association of management innovation and technological innovation on organizational performance".

Recent studies highlighted management innovation as one variable affecting corporate performance indirectly through tacit and explicit knowledge (Magnier-Watanabe and Benton, 2017). This finding again highlighted the inconsistency of the results regarding the relationship between MI and firm performance. Besides, the research used several financial and non-financial indicators altogether to measure the corporate performance, which is not recommended to do according to Venkatraman and Ramanujam (1986). Thus, this study aims to investigate relationship between management innovation and firm performance measurements.

From the literature review dedicated to management innovation, we could conclude that no studies highlighted the relationship between this term, entrepreneurial orientation, and firm performance. However, as we stated above, management innovation and entrepreneurial orientation could affect the firm performance separately. Thus, we could assume that EO and MI together also have a positive influence on firm performance. In order to investigate the functional model considering all these measurements, we propose that:

H2(a): Management innovation strengthens the influence of entrepreneurial orientation on financial performance.

H2(b): Management innovation strengthens the influence of entrepreneurial orientation on performance against competitors.

H2(c): Management innovation strengthens the influence of entrepreneurial orientation on strategic performance.

Therefore, the theoretical framework assumes the moderation effect of MI and looks in the following way (see Figure 1):
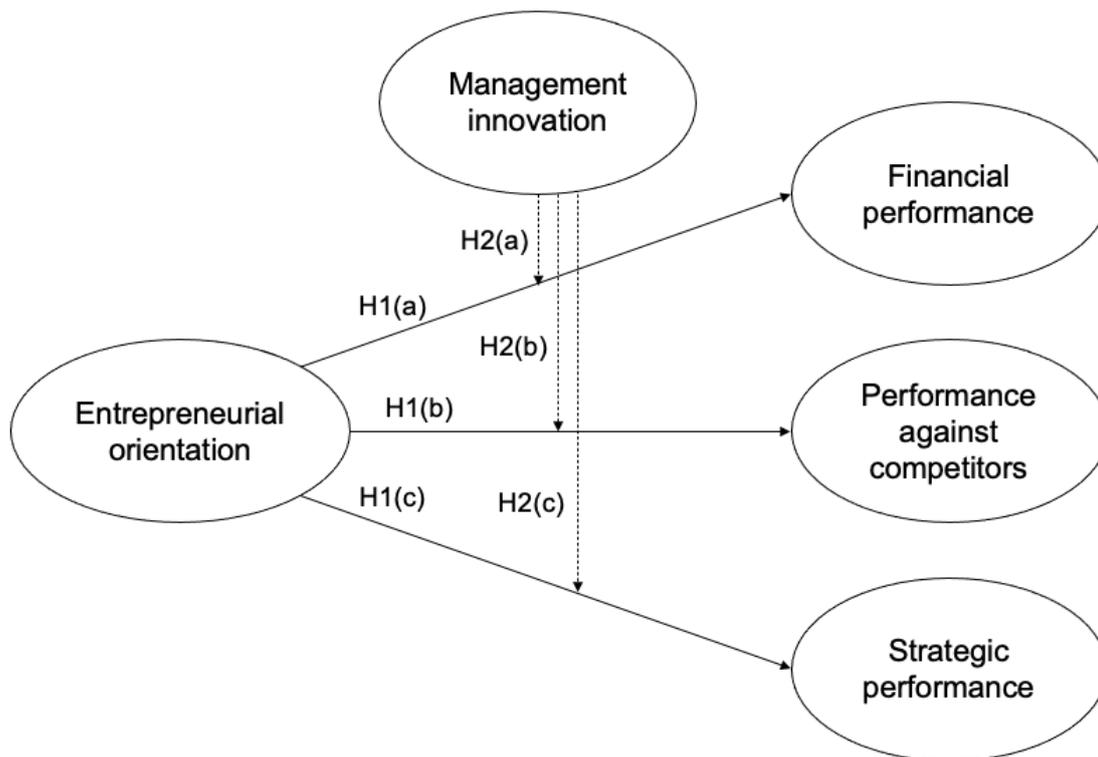
Figure 1. The first theoretical framework: management innovation as a moderator

5.3.   Mediation effect of management innovation

As we mentioned previously there is practical research considered entrepreneurial orientation, management innovation and firm performance altogether. Therefore, yet we have theoretical justification of the model with moderation effect of management innovation, It could not include all the effects that management innovation bring in firm performance. Besides, since the goal of this study is to investigate if there is a connection between management innovation, entrepreneurial orientation, and firm performance; and to understand how this relationship looks like, we propose to consider also alternative model illustrating relationship between EO, MI and performance – the model with mediation effect of MI.

Since mediation effect of MI assumes that there is an indirect effect of this construct via entrepreneurial orientation on firm performance, we firstly introduce the theory regarding the relationship between EO and MI. After that, we move on to the justification of indirect effect of MI and how it affects firm performance measurements. In conclusion, we highlight the direct influence of management innovation on firm performance measurements and propose theoretical model with mediation effect.

The role of innovations as an inevitable source of firm growth firstly explained by Schumpeter (1934) in the "Entrepreneurial Model" (Damanpour, 2010). The model argues that the intermittent change resulting from the emergence of new firms is the main source of innovation in economic systems (Schumpeter, 1934). In this term, competition between different small entrepreneurial firms creates technological breakthroughs that lead to "temporary monopoly profits" for the entrepreneur and lead to economic development (Barras, 1990). The entrepreneurial model sees innovation as the identity of new, stand-alone companies creating new industries or acting as the primary agent of change in established industries (Walker et al., 2015).

More recent work by Schumpeter (1943) proposed an alternative model of innovation known as "Corporate Model" (Barras, 1990; Damanpour, 2010) which emphasises economies of scale derived from technological progress and gives an advantage to large operating firms that "have the resources to at least partially internalise the R&D process" as the main source of innovation for economic development and progress" (Barras, 1990). Both models proposed by Schumpeter (1934, 1943) highlight the role of small firms in innovation compared to those who have been in the market for a long time (i.e. large firms). At the same time, both models underline the importance of introducing new product and technological processes for economic growth and organisational efficiency (Walker et al., 2015).

Besides, over time, the process of "creative destruction" associated with the entrepreneurial model has been displaced by the process of "creative accumulation" associated with the corporate model (Sanidas, 2005). Therefore, management innovations as innovations in organisational strategy, structure and processes, is primarily relevant to large, complex organisations rather than small entrepreneurial firms (Walker et al., 2015). Hence, the role of MI on a firm performance should be considered in the context of the corporate model of innovation and the process of creative accumulation.

Based on the information above we suggest that the relationship between entrepreneurial orientation and management innovation exists, and more than that, that firm-level entrepreneurship positively effect on MI. Thus, we state the following hypothesis:

H3: Entrepreneurial orientation has a positive influence on management innovation.

However, according to the literature review, there is no theoretical basis behind the role of these two constructs – management innovation and entrepreneurial orientation - together on firm performance. Nevertheless, as stated in previous paragraphs, the studies proved the positive effect of entrepreneurial orientation on firm performance and the positive influence of management

innovation on financial performance. Therefore, this study aims to build a connection between all these constructs by testing different variations of the relationship between EO, MI and firm performance constructs based on theoretical literature. Thus, we suggest that management innovation could be a mediator in the model, providing an indirect effect of entrepreneurial orientation on firm performance. Thus, we state the following hypotheses:

H4(a): Management innovation mediates the relationship between entrepreneurial orientation and financial performance.

H4(b): Management innovation mediates the relationship between entrepreneurial orientation and performance against competitors.

H4(c): Management innovation mediates the relationship between entrepreneurial orientation and strategic performance.

Therefore, we provide the second theoretical framework that assumes that MI is a mediator to measure entrepreneurial orientation's indirect effect (Figure 2). Mediation is usually used to explain the causal effect that the antecedent has on the dependent variable more accurately.
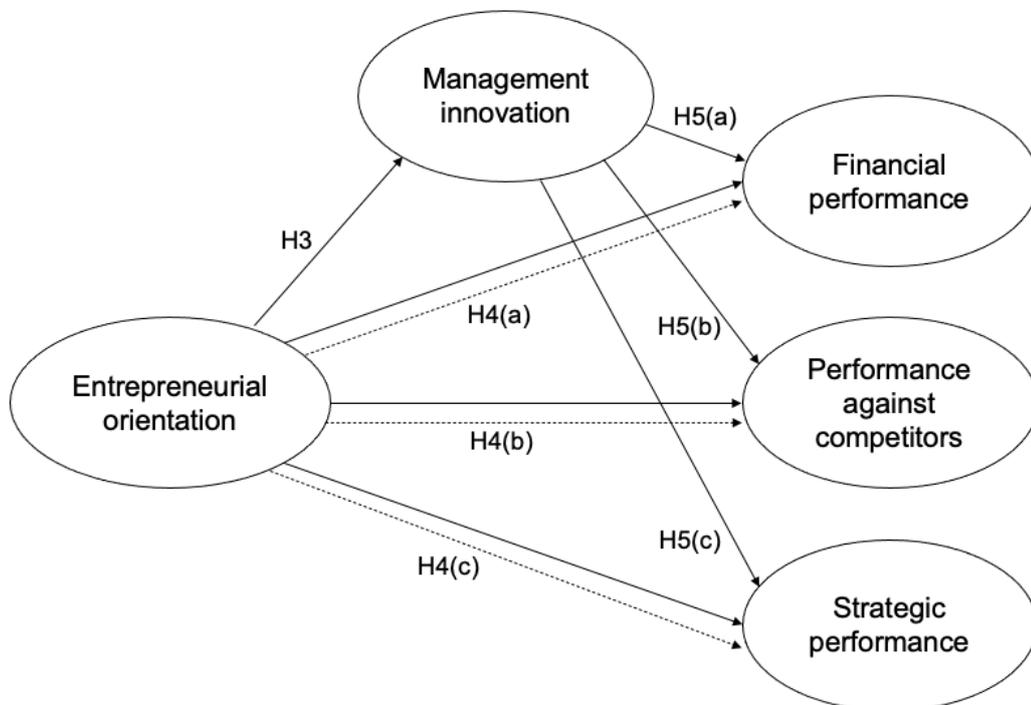
Figure 2. The second theoretical framework: management innovation as a mediator

Besides, based on the literature review provided in subsections 2-5, the influence of management innovation on firm performance has controversial results: It could affect both financial and non-financial performance, and its influence on the second could be much more significant. In order to check whether management innovation positively affects both financial and non-financial dimensions of firm performance, we suppose the following hypotheses:

H5(a): Management innovation positively affects financial performance.

H5(b): Management innovation positively affects performance against competitors.

H5(c): Management innovation positively affects strategic performance.

6. RESEARCH DESIGN

6.1. Data collection and sample

The data was collected and used in the research conducted in the research project. Data were collected via an online survey among the companies with more than 50% foreign ownership operating in Finland from January until March 2014. Based on this criteria It was defined 1719 foreign-owned subsidiaries. While searching for business contact details in databases and on the internet, the contact details of 1298 companies were found. Of all company managers contacted by phone, 544 agreed to take part in the research. They were then sent a link to the web survey by email and three reminders to complete the survey. As a result, 325 executives took part in the survey; thus, a response rate equals 59.7%.

The average age of the subsidiaries represented in the sample in this study is 35 years, while the parent company's average age is 73 years. The subsidiaries' managers have been working in companies for an average of thirteen years and have managed the company for seven years.

Besides, the sample consists of 325 foreign-owned firms operating in Finland in 2014. The companies investigated in the research consists of very large companies (14%), large firms (43%) and medium-sized enterprises (44%). The average number of very large companies equals 762, in large companies – 105, and medium-sized enterprises – 23 (see Appendix I). The average number of companies related to the particular corporate group is 260, 244, and 108 in very large, large and medium-sized companies.

In addition, the sample investigated in this study represents several industries referred to the foreign-owned subsidiaries: wholesale and retail trade, repair of motor vehicles and

motorcycles (36.5%); manufacturing (27.1%): professional, scientific and technical activities (10%); information and communication (6.1%); transportation and storage (5.5%); and other services (14.8%). Appendix I includes the detailed information related to the industries where the companies are operating.

6.2. Key constructs

The models consist of the following latent constructs: entrepreneurial orientation, financial performance, performance against competitors, strategic performance and management innovation. The constructs are measured via a 5-points Likert scale and presented in details in Appendix II.

As we stated before entrepreneurial orientation is broadly used as a three-dimensional construct (Covin and Slevin, 1986) and a four-dimensional measure (Lumpkin and Dess, 1996). In this research to measure entrepreneurial orientation we used previously validated measure for EO that captures five dimensions: innovativeness, risk-taking, market proactiveness, competitive aggressiveness and autonomy, based on Lumpkin and Dess (1996). Thus, entrepreneurial orientation is a second-order construct in the models.

Management innovation is a first-order construct that was firstly designed by Vaccaro et al. (2012). The construct consists of the six items divided into three categories: management practices, processes and structures. Practices reflect the changes managers provide during their work, including setting new rules and procedures. Management processes relate to how the work is done and consist of changes regulating the work (including compensation). Structures refer to how companies organise communication, coordinate and use the efforts of their employees.

Financial performance, performance against competitors, and strategic performance are first-order constructs that we use to measure firm performance. According to Venkatraman and Ramanujam (1986) these constructs should be considered separately from each other to evaluate performance properly. Besides, financial performance is formulated according to Covin, Prescott and Slevin (1990), whereas strategic performance and performance against competitors were previously used by Schilke (2014).

6.3. Methodology

We use structural equation modelling (SEM) to analyse the data, which is assessed from the confirmatory factor analysis (CFA). The main goal of confirmatory factor analysis (CFA) is to

test the latent constructs' hypothesis. However, the structure of latent constructs must be built from the theoretical perspective regarding the related topic (Hair et al., 2010).

To understand whether the latent constructs refer to the particular theory, we should run CFA with all the given first-order constructs. According to Chong et al. (2014), pooled CFA is better and more accessible than individual analysis since It is more time-saving for running the measurement model. However, this research assumes that the model has a second-order construct of entrepreneurial orientation. Thus, this study firstly provides CFA analysis for the first-order constructs and then consider CFA for the second-order model (subsection 7.1).

The relationship between the latent construct and its dimensions (or items) is measured through the factor loadings. The value of factor loadings should be equal to or higher than 0.7. However, values higher than 0.5 also be accepted when conditions for the model fit indices are reached (Hair et al., 2010). The fit indices define whether the model has a good fit. Table 1 shows the set of fit indices and their threshold values.

Fit index	Threshold value
Chi-square/df or CMIN/df	**≤ 5**
P-value	**> 0.05**
GFI	**> 0.9**
CFI	**> 0.9**
TLI	**> 0.9**
RMSEA	**< 0.08**
PCLOSE	**> 0.05**

Table 1. Fit indices and threshold values for CFA

In order to test the model with management innovation as a moderator we will add an interaction effect between MI and EO. After that, we will test what influence it has on a firm performance measurements: financial and strategic performance, and performance against competitors. We suppose, that management innovation significantly strengthen the effect of entrepreneurial orientation on firm performance constructs. Thus, the interaction effect should have a positive significance influence on these measurements.

Besides, we will run the second model presented a mediation effect of management innovation between EO and firm performance indicators. It assumes that entrepreneurial orientation both significantly positive direct and indirect effect on a firm performance. However, to test this model we should make several steps:

- First step: to test the model indicated the relationship between entrepreneurial orientation and firm performance measurements;

- Second step: to test the relationship between entrepreneurial orientation and management innovation;

- Third step: to run the model included both entrepreneurial orientation and management innovation in order to test their influence on these firm performance measurements;

- Fourth step: to test the mediation effect of management innovation.

In addition, before the data analysis, we should check the reliability and validity of the constructs and conduct the confirmatory factor analysis (CFA). This preparation is crucial for further analysis and is a necessary first step to understand that the constructs have a good fit. Subsection 6.5 includes detailed information about the reliability and validity analysis of the data.

6.4. Data analysis

The data used in this study includes 24 dimensions related to the particular latent constructs (see Appendix II). This section provides detailed information about them: the number of missing values, mean, standard deviation, and others.

After running descriptive analysis, we investigated several number of missing in our data (Appendix III). As the number of missing is not very high (approximately 2-3 per item in the sample), we decided to replace them for mean values to keep enough data for further analysis. Table 2 shows descriptive statistics for the data with replaced missing values.

Item	N		Mean	Median	Std. Deviation	Variance	Skewness	Kurtosis
	Valid	**Missing**						
sa4	**325**	**0**	**3,59**	**4**	**1,066**	**1,136**	**-0,436**	**-0,581**
sa6	**325**	**0**	**3,76**	**4**	**1,083**	**1,173**	**-0,737**	**-0,125**
sa7	**325**	**0**	**3,92**	**4**	**1,172**	**1,373**	**-1,005**	**0,138**
sa9	**325**	**0**	**2,13**	**2**	**1,19**	**1,417**	**0,883**	**-0,15**
eoi3	**325**	**0**	**3,51**	**4**	**0,952**	**0,907**	**-0,357**	**-0,159**
eoi4	**325**	**0**	**3,21**	**3**	**1,049**	**1,1**	**-0,155**	**-0,468**
eoca1	**325**	**0**	**3,18**	**3**	**0,977**	**0,954**	**-0,22**	**-0,346**
eoca2	**325**	**0**	**3,88**	**4**	**0,904**	**0,817**	**-0,727**	**0,363**
eomp2	**325**	**0**	**3,23**	**3**	**0,973**	**0,946**	**-0,225**	**-0,244**
eomp3	**325**	**0**	**3,27**	**3**	**1,017**	**1,034**	**-0,304**	**-0,384**
eofrt1	**325**	**0**	**2,05**	**2**	**0,979**	**0,958**	**0,702**	**-0,135**
eofrt2	**325**	**0**	**3,22**	**3**	**0,991**	**0,981**	**-0,192**	**-0,429**
eofrt3	**325**	**0**	**2,96**	**3**	**1,056**	**1,115**	**-0,087**	**-0,652**
fps3	**325**	**0**	**3,33**	**3**	**1,005**	**1,011**	**-0,248**	**-0,448**
fps4	**325**	**0**	**3,41**	**3**	**1,138**	**1,295**	**-0,343**	**-0,599**
sp1	**325**	**0**	**3,67**	**4**	**0,934**	**0,872**	**-0,627**	**0,098**
sp2	**325**	**0**	**3,56**	**4**	**1,162**	**1,351**	**-0,498**	**-0,618**
sp3	**325**	**0**	**3,57**	**4**	**1,073**	**1,151**	**-0,367**	**-0,54**
pacsi1	**325**	**0**	**3,51**	**4**	**1,189**	**1,414**	**-0,397**	**-0,704**
pacsi2	**325**	**0**	**3,45**	**4**	**1,148**	**1,319**	**-0,344**	**-0,666**
pacsi3	**325**	**0**	**3,43**	**3**	**1,089**	**1,187**	**-0,32**	**-0,47**
mirec2	**325**	**0**	**3,59**	**4**	**1,066**	**1,136**	**-0,436**	**-0,581**
mirec3	**325**	**0**	**3,76**	**4**	**1,083**	**1,173**	**-0,737**	**-0,125**
mirec6	**325**	**0**	**3,92**	**4**	**1,172**	**1,373**	**-1,005**	**0,138**

Table 2. Descriptive statistics for the clean data (without missing values)

Since we plan to use the SEM approach (through running the CFA analysis), we should check if the data has outliers, adequate sample size, and multivariate normality. As our items are measured through a 5-points Likert scale, we do not have any outliers in the data. Besides, since we have 325 observations, which is much higher than the number of factors investigated in the research (criteria for sufficient sample size), our sample is adequate.

Multivariate normality assumes that a linear combination of the items is also normally distributed. The standard approach in SEM is a maximum likelihood estimation, which assumes the research exhibit's constructs exhibit multivariate normality. Thus, we should check whether the given data has multivariate normality before running the analysis. An essential requirement is to check skewness and kurtosis values and critical ratios for testing their significance in these terms. According to Byrne (2010), critical ratios for skew and kurtosis statistics should be indicated between -1.96 and 1.96 (for a significance level equalled to 0.05) to claim the normality. However, this rule could be easily rejected in large-sized samples (Kline, 2011). Thus, there is a more descriptive approach to assessing normality. For instance, Byrne (2010) proposes to use a kurtosis value higher than seven as an indicator of substantial deviation of normality. Besides, Kline (2011) suggests that kurtosis values ranged from 8 to 20 determine more sufficient kurtosis levels, and skewness values higher than 3 in absolute value indicate extreme levels of skewness. In addition, Byrne (2010) claims that kurtosis is a more relevant measure for normality rather than skewness as it influences variance and covariance tests, whereas skewness effect on means.

Variable	Min	Max	Skew	C.R.	Kurtosis	C.R.
eofrt3_1	1	5	-0,086	-0,634	-0,66	-2,43
eoi4_1	1	5	-0,154	-1,132	-0,479	-1,762
fps4_1	1	5	-0,342	-2,514	-0,608	-2,237
fps3_1	1	5	-0,247	-1,819	-0,46	-1,691
pacsi3_1	1	5	-0,318	-2,342	-0,482	-1,773
pacsi2_1	1	5	-0,343	-2,523	-0,674	-2,481
pacsi1_1	1	5	-0,395	-2,91	-0,712	-2,62
sp3_1	1	5	-0,366	-2,69	-0,551	-2,026
sp2_1	1	5	-0,495	-3,645	-0,626	-2,305
sp1_1	1	5	-0,624	-4,59	0,078	0,289

Variable	Min	Max	Skew	C.R.	Kurtosis	C.R.
mirec6_1	1	5	-0,17	-1,253	-0,846	-3,114
mirec3_1	1	5	0,126	0,928	-0,45	-1,655
mirec2_1	1	5	-0,017	-0,121	-0,303	-1,116
sa9_1	1	5	0,879	6,466	-0,166	-0,61
sa4_1	1	5	-0,434	-3,193	-0,59	-2,173
sa6_1	1	5	-0,733	-5,397	-0,141	-0,519
sa7_1	1	5	-1,001	-7,365	0,117	0,431
eofrt1_1	1	5	0,699	5,146	-0,152	-0,558
eofrt2_1	1	5	-0,191	-1,409	-0,441	-1,622
eomp3_1	1	5	-0,302	-2,226	-0,396	-1,458
eomp2_1	1	5	-0,224	-1,645	-0,259	-0,952
eoca2_1	1	5	-0,724	-5,328	0,339	1,248
eoca1_1	1	5	-0,219	-1,608	-0,359	-1,323
eoi3_1	1	5	-0,356	-2,617	-0,175	-0,644
Multivariate					68,39	17,45

Table 3. Assessment for normality of data

Table 3 shows that kurtosis values range from -0.846 to 0.339, which is much lower than 7 and do not vary between the interval from 8 to 20. As Byrne (2010) suggests that kurtosis values are more substantial to indicate normality, we do not pay much attention into skewness values during this test. Thus, we could conclude that the assumption about multivariate normality is accepted regarding this data.

6.5. Validity and reliability

As we stated above validity and reliability analysis are necessary part of data analysis before the hypotheses testing. Construct validity reflects the degree to which the measurement estimate reflects the latent construct to be measured (Furr, 2017). According to Fornell and Larcker (1981) construct validity of CFA consists of convergent validity and discriminant validity tests.

These tests are obligatory requirements to get accountable data. Therefore, both convergent validity and discriminant validity are presented in this research.

In addition to validity reliability is also a requirement for measurement, as it relates to consistency of measurement results. According to Margono (2015) a construct is reliable if it repeatedly measures the same items but gives relatively stable results. The research provides tests for two types of reliability: construct and composite reliability.

Category	Indicator	Threshold value
Convergent validity	**Average variance extracted (AVE)**	**AVE ≥ 0.5**
Discriminant validity	**Average variance extracted (AVE) and square-correlations between the constructs**	**Ri,j2 < AVEj** **Ri,j2 < AVEi** **Where i and j represent different latent constructs**
Construct reliability	**Cronbach's alpha**	**Cronbach's alpha > 0.7**
Composite reliability	**Composite Reliability (CR)**	**CR > 0.7**

Table 4. Indicators and threshold indices for validity and reliability analysis

Thus, this section firstly presents validity check (subsections 6.5.1-6.5.2). After that we show reliability tests of the given latent constructs (subsections 6.5.3-6.5.4). Besides, in order to decide whether the given latent constructs are valid and reliable, we use four indicators and threshold values presented in Table 4.

6.5.1. Convergent validity

Convergent validity referred to the degree to which similar constructs are quantified using different variables (Hill and Hughes, 2007). Convergent validity is based on the correlation between the dimensions related to the same construct. This test thus provides assurance that the variables belong to the particular latent construct to be measured.

To determine convergent validity It is usually used the value of dimensions' factor loading. According to Igbaria et al. (1997) the latent construct has a good fit in case when factor loadings of all the dimensions related to this construct are equal or higher than 0.5. In addition, as a measure of convergent validity scientists use average extracted variance, which could explain to which dimensions are divided between constructs in structural equation modelling (SEM)

(Hair et al., 2010). In this case average extracted variance of the latent construct (AVE) should be higher than 0.5 in order to accept It's good fit.

For the purposes of this research we consider the following latent constructs: firm's innovativeness, risk-taking, market proactiveness, competitive aggressiveness, autonomy, financial performance, performance against competitors, strategic performance and management innovation. Evaluated factor loadings and average extracted variance of these constructs are presented in Table 5.

Construct/items	Standardized factor loading	Cronbach's Alpha	CR	AVE
	> 0.5	> 0.7	> 0.7	≥ 0.5
Subsidiary autonomy (SA)				
sa4_1	**0,78**	**0,799**	**0,78**	**0,48**
sa6_1	**0,726**			
sa7_1	**0,66**			
sa9_1	**0,584**			
Management innovation (MI)				
mirec2_1	**0,815**	**0,81**	**0,82**	**0,60**
mirec3_1	**0,794**			
mirec6_1	**0,703**			
Innovativeness (EOI)				
eoi3_1	**0,948**	**0,724**	**0,76**	**0,63**
eoi4_1	**0,602**			
EOCA				
eoca1_1	**0,79**	**0,772**	**0,77**	**0,63**
eoca2_1	**0,798**			
Proactiveness (EOMP)				
eomp2_1	**0,869**	**0,812**	**0,81**	**0,69**
eomp3_1	**0,788**			

Construct/items	Standardized factor loading	Cronbach's Alpha	CR	AVE
	> 0.5	> 0.7	> 0.7	≥ 0.5
Risk-taking (EOFRT)				
eofrt3_1	**0,588**	**0,726**	**0,72**	**0,48**
eofrt2_1	**0,905**			
eofrt1_1	**0,52**			
Financial performance (FPS)				
fps3_1	**0,76**	**0,81**	**0,82**	**0,70**
fps4_1	**0,903**			
Strategic performance (SP)				
sp1_1	**0,804**	**0,842**	**0,81**	**0,59**
sp2_1	**0,646**			
sp3_1	**0,843**			
Performance against competitors (PACSI)				
pacsi1_1	**0,928**	**0,94**	**0,94**	**0,84**
pacsi2_1	**0,908**			
pacsi3_1	**0,916**			

Table 5. Measurement items overview, standardized factor loadings, reliability and validity measures

The results show that factor loadings of the given constructs are higher than 0.5, which is consistent with the criteria stated by Igbaria et al. (1997). Besides, values of the given constructs except autonomy exceed threshold value of 0.5, thus, we could conclude that they could measure latent constructs. In case of autonomy, AVE equals to 0.48 which is slightly lower than 0.5. Nevertheless, according to Fornell and Larcker (1981) in case of AVE is less than threshold value but composite reliability is still higher than 0.6, the convergent validity of the construct is still could be accounted as adequate.

6.5.2. Discriminant validity

Discriminant validity also is a requirement during latent construct development. It aims to prove that a particular construct significantly differs from another one (Voorhees et al., 2015). In other words, discriminant validity demonstrates how one construct is different from other constructs in the model.

In order to check discriminant validity we should determine correlations between latent constructs. According to Henseler et al. (2015) a particular latent construct should have a low correlation with other given constructs. In other words, means that discriminant validity proves that each latent construct is unique. If the correlation between two constructs is lower than 0.85, the discriminant validity is present. Besides, according to Fornell and Larcker (1981) a particular latent construct should demonstrate more variance of the related item rather than with other construct in the model. It means that square correlation between two constructs should be less than AVE of each.

	Mean	St. dev.	MI	SA	EOI	EOCA	EOMP	EOFRT	FPS	SP	PACSI
MI	2,91	0,70	0,60	0,02	0,11	0,07	0,08	0,11	0,02	0,08	0,02
SA	3,35	0,73	0,14	0,48	0,02	0,00	0,01	0,01	0,00	0,02	0,01
EOI	3,36	0,73	0,34	0,13	0,63	0,27	0,38	0,26	0,09	0,17	0,11
EOCA	3,53	0,70	0,26	0,03	0,52	0,63	0,39	0,30	0,09	0,24	0,12
EOMP	3,25	0,75	0,28	0,07	0,62	0,62	0,69	0,32	0,11	0,30	0,14
EOFRT	2,74	0,67	0,33	0,11	0,51	0,54	0,57	0,48	0,03	0,08	0,03
FPS	3,37	0,81	0,15	0,07	0,29	0,30	0,33	0,17	0,70	0,31	0,58
SP	3,60	0,76	0,28	0,13	0,42	0,49	0,54	0,29	0,56	0,59	0,47
PACSI	3,46	0,89	0,16	0,11	0,33	0,34	0,38	0,17	0,76	0,69	0,84

Table 6. Descriptive statistics, correlations, and average variance extracted for the model constructs[1]

[1] Notes: a) Below the diagonal – correlations between the constructs. b) Above the diagonal – squared correlations. c) Diagonal – AVEs

Table 6 represents squared correlations and average variance extracted for the given constructs. It shows that squared correlation of each latent construct is lower than related to them AVE. Thus, we could conclude that these constructs are fulfilled with the criteria of discriminant validity.

6.5.3. Construct reliability

Construct reliability means the measurement of dimensions' internal consistency that represent a particular latent construct (Sujati and Akhyar, 2020). It is usually used to evaluate to which the items behind the construct are used in structural equations modelling. Construct reliability could be measured after construct validity is confirmed with the confirmatory factor analysis. In order to estimate it we calculate Cronbach's alpha of the given constructs. The coefficient of construct reliability should be higher than 0.7 in order to accept a good fit of the latent construct.

Table 5 presents the results of construct reliability measurement. It shows that latent constructs of innovativeness, risk-taking, market proactiveness, competitive aggressiveness, autonomy, financial performance, performance against competitors, strategic performance and management innovation have reliability coefficients higher than 0.7: 0.724, 0.726, 0.812, 0.772, 0.799, 0.81, 0.94, 0.842 and 0.81 accordingly. Taking into account the threshold value for construct reliability coefficients (>0.7) we could conclude that the given constructs are reliable and feasible to further evaluation in the model.

6.5.4. Composite reliability

Composite reliability refers to measurement of scale reliability overall. It is usually measured with confirmatory factor loadings and based on the factor loadings of the given constructs. Threshold value for composite reliability coefficients (CR) is also higher than 0.7.

Table 5 indicates composite reliability coefficients for all the considered latent constructs (CR). It represents that the given constructs have CR higher than 0.7. It means that all these constructs are reliable, therefore, we could use them in the hypotheses testing.

7. FINDINGS

7.1. Model specification

In order to choose the preferable model specification we tested via confirmatory factor analysis (CFA) two different models: (1) the model consisted with all the given latent constructs (separate constructs related to entrepreneurial orientation, financial performance, performance against competitors, strategic performance and management innovation), and (2) the model assumed second-order latent construct of entrepreneurial orientation (EO) included innovativeness, risk-taking, market proactiveness, competitive aggressiveness and autonomy. Graphical representation of both specifications you could see in Appendix IV.

According to Field (2013) factor loadings of items have to be higher than 0.5 in order to accept that they are related to the particular latent construct. However, if there are one or two items with lower standardized factor loading they still could be accounted as acceptable in case if they qualify other model fit indices such as CFI, TLI, and RMSEA. Appendix V represents standardised factor loadings for both first- and second-order models. Based on them we could conclude that standardised factor loadings in 1-order and 2-order models are quite good. Thus, we accept that these items indeed relate to the given latent constructs.

In order to decide what model specification is better, we compare the results of CFA. Table 7 shows comparison of the results after the given models' confirmatory factor analysis. The details of CFA results for both models could be found in Appendix VI.

CFA models	χ^2	df	χ^2/df	p-value	GFI	CFI	TLI	RMSEA	PCLOSE
Threshold values			≤ 5	> 0.05	< 0 .9	< 0.9	< 0.9	< 0.08	> 0.05
1-order model	344,52	214	1,61	0	0,922	0,97	0,961	0,043	0,903
2-order model	393,36	235	1,674	0	0,912	0,963	0,957	0,046	0,818

Table 7. Comparison of the first-order and second-order CFA

From the table above we could conclude that both models have relatively good fit: X^2 is less than 5, GFI, CFI and TLI are higher than 0.9, RMSEA is lower than 0.08, and PCLOSE is higher than 0.05. Both models have p-value equal to zero, however, it could be accounted as adequate since the sample in the research is quite large.

We could check whether the imposition of a second-order latent construct leads to a significant decrease in the model fit in comparison with a first-order model. In this term It is usually used a chi-square difference test, given that the first-order model is nested within the second-order model (Brown, 2015). Thus, we compute the chi-square test value and the difference in the degrees of freedom in the following way:

$$X^2{}_{diff} = X^2{}_{2-order\ model} - X^2{}_{1-order\ model}$$

$$df_{diff} = df_{2-order\ model} - df_{1-order\ model}$$

The difference between chi-square equals to 48.8 with degrees of freedom 21. From the chi-squares probabilities table we see that probability level for this values is approximately 0.000535. Hence, the null hypothesis that the second-order model does not fit significantly worse than the first-order model is rejected.

However, chi-squared difference test could reject the models even for minor violations, especially when the sample size is large (>300) (Chen, 2007). The sample considered in this study could be accounted as large, since we have 325 observations. Therefore, we consider alternative criteria, which assumes that a comparative fit index difference (CFI) should be no larger than 0.01, if the second-order model does not significantly worsen. The difference between CFI indices of the given models equals to 0.07. Thus, the result supports the tenability of the second-order factor model. For the further analysis we use second-order construct to fully indicate entrepreneurial orientation.

7.2. Management innovation as a moderator

In order to check whether management innovation strengthens influence of entrepreneurial orientation on a firm performance we consider the model indicated five latent constructs: entrepreneurial orientation (a second-order construct), management innovation, financial performance, strategic performance, and performance against competitors. In this case, this study assumes that management innovation interacts with entrepreneurial orientation as a predictor variable to change the degree of the relationship between entrepreneurial orientation and performance indicators. Figure 6 in Appendix VII illustrates graphical representation of this model. Table 8 represents the results of this analysis. First of all, we could conclude that moderator does not have a significant influence on the performance against competitors and strategic performance, since the p-values in this cases are higher than the significance level of 0.05: p-values are equal to 0.506 and 0.564 accordingly. Therefore, the hypotheses H2(b) and H2(c) that

management innovation strengthens the impact of entrepreneurial orientation on performance against competitors and strategic performance are rejected.

Path			Estimate	S.E.	C.R.	P-value
FPS	<---	EO	0,443	0,07	6,343	***
FPS	<---	MI	-0,063	0,068	-0,919	0,358
FPS	<---	EO_MI	0,067	0,029	2,314	0,021
PACSI	<---	EO	0,161	0,071	2,276	0,023
PACSI	<---	FPS	1,174	0,09	13,08	***
PACSI	<---	EO_MI	-0,018	0,028	-0,666	0,506
PACSI	<---	MI	-0,037	0,064	-0,584	0,559
EOCA	<---	EO	0,862	0,071	12,162	***
EOI	<---	EO	0,809	0,069	11,767	***
SA	<---	EO	0,067	0,067	1,008	0,314
EOFRT	<---	EO	0,524	0,067	7,807	***
EOMP	<---	EO	1			
SP	<---	EO	0,371	0,053	7,041	***
SP	<---	PACSI	0,447	0,035	12,604	***
SP	<---	EO_MI	0,011	0,019	0,577	0,564
SP	<---	MI	0,043	0,045	0,958	0,338

Table 8. Unstandartised regression weights for the moderation model (financial performance, strategic performance and performance against competitors)

We found out that influences of interaction variable and moderator are statistically insignificant in the model presented above, however, at the same time the effect of EO_MI is statistically significant for financial performance, we run the model with moderation effect of MI on entrepreneurial orientation-financial performance relationship only (see graphical illustration of this model in Appendix IV). The results are presented in Table 9. It shows that entrepreneurial orientation has a positive significant effect on financial performance. Meanwhile, there is no significant relationship between management innovation and financial performance. It could be

prove with the critical ratio (t-statistics) and p-value: -1.3 and 0.182, which is much higher than the significance level (0.05). Thus, the model shows that entrepreneurial orientation affect financial performance significantly, while management innovation does not significantly influence financial performance.

Path			Estimate	S.E.	C.R.	P-value
FPS	<---	EO	0,447	0,07	6,378	***
FPS	<---	MI	-0,073	0,067	-1,089	0,276
FPS	<---	EO_MI	0,063	0,028	2,21	0,027
PACSI	<---	EO	0,152	0,066	2,288	0,022
PACSI	<---	FPS	1,171	0,089	13,209	***
EOCA	<---	EO	0,863	0,071	12,154	***
EOI	<---	EO	0,81	0,069	11,75	***
SA	<---	EO	0,068	0,067	1,013	0,311
EOFRT	<---	EO	0,525	0,067	7,804	***
EOMP	<---	EO	1			
SP	<---	EO	0,386	0,05	7,689	***
SP	<---	PACSI	0,445	0,035	12,648	***

Table 9. Unstandartised regression weights for the moderation model (financial performance only)

Besides, the results show that when management innovation interacts with entrepreneurial orientation there is a significant relationship between interaction variable (EO_MI) and financial performance. Indeed, t-statistics in this case equals to 2.21 with a p-value of 0.027 (<0.05), which indicates the interaction variable (management innovation and entrepreneurial orientation) influences financial performance. In addition, when effect of interaction variable is statistically significant, it means that management innovation has a certain moderating effect on the relationship between entrepreneurial orientation and financial performance. The Figure 3 and Table 10 illustrate the interaction effect of management innovation on the EO-FPS relationship.
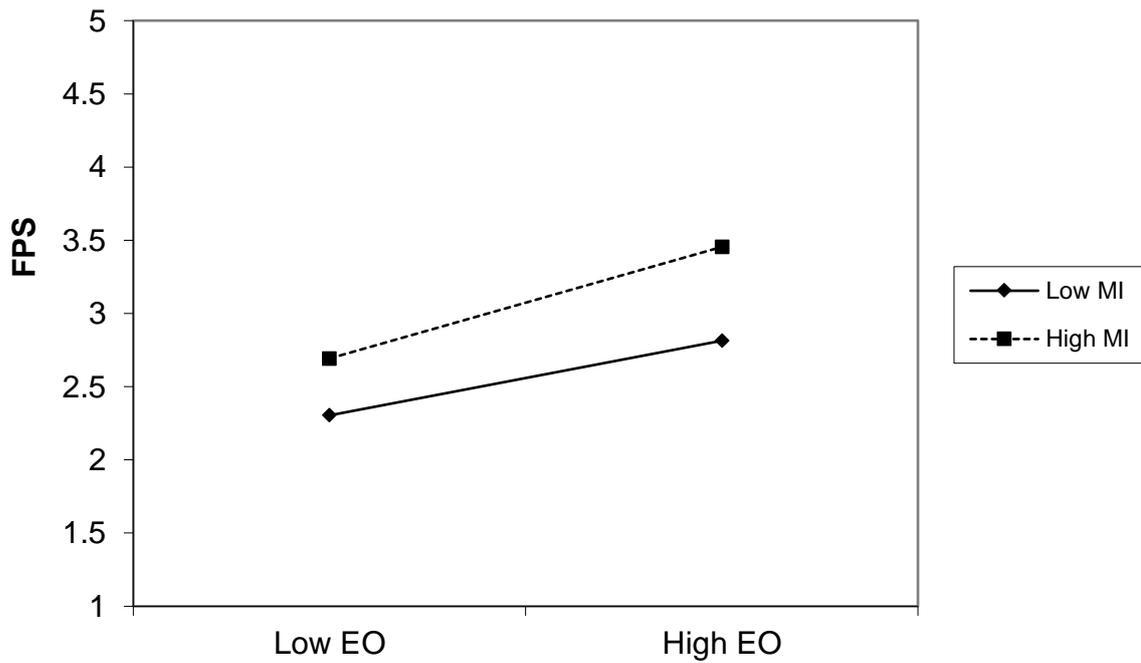
Figure 3. Moderation effect of management innovation on the relationship between entrepreneurial orientation and financial performance

Variable names	
Name of independent variable:	**EO**
Name of moderator:	**MI**
Name of dependent variable:	**FPS**
Unstandardised Regression Coefficients	
Independent variable:	**0,447**
Moderator:	**-0,073**
Interaction:	**0,063**

Table 10. Moderation effect of management innovation on the relationship between entrepreneurial orientation and financial performance

Taking into account threshold values for the goodness of fit indices presented in Table 1, we could conclude that the model has a good fit: GFI = 0.912 (>0.9), CFI = 0.965 (>0.9), TLI = 0.96 (>0.9), RMSEA = 0.042 (<0.08) and PCLOSE = 0.955 (>0.05) (see Table 11). P-value of the

model is around zero, however, as we stated previously this value could not be higher than significance level when the sample used in analysis is large.

CFA model	χ^2	df	χ^2/df	p-value	GFI	CFI	TLI	RMSEA	PCLOSE
Threshold values	-	-	≤ 5	> 0.5	> 0.9	> 0.9	> 0.9	< 0.08	> 0.05
Model with a moderator	408,11	259	1,576	0	0,912	0,965	0,96	0,042	0,955

Table 11. Goodness of fit indices for the model with moderation effect of management innovation on the relationship between entrepreneurial orientation and financial performance

Overall, the model has a good fit and indicates statistically significance of moderation effect of management innovation. Thus, we could conclude that the hypothesis H2(a) that the moderator variable indeed has a positive influence on the relationship between entrepreneurial orientation and financial performance is not rejected with a significance level of 0.05.

7.3. Management innovation as a mediator

In order to test whether management innovation could be a mediator in the model indicted relationship between entrepreneurial orientation, financial performance, performance against competitors and strategic performance we should run four models discussed in the subsection 6.1. Graphical illustration of these models are presented in Appendix VIII.

The first model indicates the relationship between entrepreneurial orientation and firm performance measurements. From the Table 12 we could conclude that there is a significant positive influence of entrepreneurial orientation on a financial and strategic performance, and on a performance against competitors, since the p-values for coefficients related to these constructs are lower than 0.01 (in the table below it represents through ***). Thus, the hypotheses H1(a), H1(b), and H1(c) stated that entrepreneurial orientation positively affects firm performance measurements are not rejected for a significance level of 0.05. Besides, the model has a good fit: GFI = 0.92 (>0.9), CFI = 0.966 (>0.9), TLI = 0.959 (>0.9), RMSEA = 0.048 (<0.08) and PCLOSE = 0.604 (>0.05) (Table 13). P-value in this model equals to approximately zero, however, as we stated previously, since we have quiet large sample size this value could not be higher than significance level.

Path			Estimate	S.E.	C.R.	P-value
FPS	<---	**EO**	**0,422**	**0,066**	**6,437**	*******
PACSI	<---	**EO**	**0,15**	**0,066**	**2,285**	**0,022**
PACSI	<---	**FPS**	**1,171**	**0,089**	**13,208**	*******
EOCA	<---	**EO**	**0,857**	**0,07**	**12,225**	*******
EOI	<---	**EO**	**0,804**	**0,068**	**11,833**	*******
SA	<---	**EO**	**0,061**	**0,066**	**0,921**	**0,357**
EOFRT	<---	**EO**	**0,514**	**0,066**	**7,769**	*******
EOMP	<---	**EO**	**1**			
SP	<---	**EO**	**0,38**	**0,05**	**7,654**	*******
SP	<---	**PACSI**	**0,445**	**0,035**	**12,631**	*******

Table 12. Unstandartised regression weights for the model EO-FPS, PACSI, SP

CFA model	χ^2	df	χ^2/df	p-value	GFI	CFI	TLI	RMSEA	PCLOSE
Threshold values	**-**	**-**	**≤ 5**	**> 0.5**	**> 0.9**	**> 0.9**	**> 0.9**	**< 0.08**	**> 0.05**
Model 1	**311,52**	**177**	**1,76**	**0**	**0,92**	**0,966**	**0,959**	**0,048**	**0,604**

Table 13. Goodness of fit indices for the model 1

The second model indicates the relationship between entrepreneurial orientation and management innovation, presented in Appendix VIII. According to unstandardized regression weights presented in Table 14 we could conclude that there is a significant positive effect of management innovation on entrepreneurial orientation, since the p-value for this coefficient is lower than 0.01 (in the table below it represents through ***). Therefore, the hypothesis H3 claimed that entrepreneurial orientation has a significant positive influence on management innovation is not rejected on a 0.05 significance level. In addition, the model has a good fit: GFI = 0.939 (>0.9), CFI = 0.965 (>0.9), TLI = 0.957 (>0.9), RMSEA = 0.047 (<0.08) and PCLOSE = 0.629 (>0.05) (Table 15).

Path			Estimate	S.E.	C.R.	P-value
EOCA	<---	EO	0,877	0,073	11,993	***
EOI	<---	EO	0,79	0,071	11,175	***
SA	<---	EO	0,059	0,067	0,876	0,381
EOFRT	<---	EO	0,56	0,07	8,039	***
EOMP	<---	EO	1			
MI	<---	EO	0,292	0,064	4,532	***

Table 14. Unstandartised regression weights for the model EO-MI

CFA model	χ^2	df	χ^2/df	p-value	GFI	CFI	TLI	RMSEA	PCLOSE
Threshold values	-	-	≤ 5	> 0.5	> 0.9	> 0.9	> 0.9	< 0.08	> 0.05
Model 2	167,36	97	1,725	0	0,939	0,965	0,957	0,047	0,629

Table 15. Goodness of fit indices for the model 2

The third model assumes that entrepreneurial orientation and management innovation affect the firm performance measurements separately (see Appendix VIII). Table 16 shows that entrepreneurial orientation has a significant positive effect on a financial and strategic performance, and on a performance against competitors, since the p-values for coefficients related to these constructs are lower than 0.01 (in the table below it represents through ***). At the same time hypotheses about management innovation and its positive influence on firm performance – H5(a), H5(b), H5(c) – are rejected because of too high p-values for the coefficients (see Table 16). Moreover, the model has a good fit as GFI = 0.908 (>0.9), CFI = 0.959 (>0.9), TLI = 0.952 (>0.9), RMSEA = 0.048 (<0.08) and PCLOSE = 0.649 (>0.05) (see Table 17).

Path			Estimate	S.E.	C.R.	P-value
FPS	<---	**EO**	**0,428**	**0,066**	**6,523**	***
FPS	<---	**MI**	**-0,028**	**0,064**	**-0,435**	**0,663**
PACSI	<---	**EO**	**0,159**	**0,066**	**2,401**	**0,016**
PACSI	<---	**FPS**	**1,169**	**0,089**	**13,203**	***
PACSI	<---	**MI**	**-0,032**	**0,059**	**-0,542**	**0,588**
EOCA	<---	**EO**	**0,855**	**0,07**	**12,221**	***
EOI	<---	**EO**	**0,803**	**0,068**	**11,844**	***
SA	<---	**EO**	**0,06**	**0,066**	**0,915**	**0,36**
EOFRT	<---	**EO**	**0,514**	**0,066**	**7,766**	***
EOMP	<---	**EO**	**1**			
SP	<---	**EO**	**0,365**	**0,049**	**7,374**	***
SP	<---	**MI**	**0,063**	**0,041**	**1,517**	**0,129**
SP	<---	**PACSI**	**0,448**	**0,035**	**12,691**	***

Table 16. Unstandartised regression weights for the model EO, MI - FPS, PACSI, SP

CFA model	χ^2	df	χ^2/df	p-value	GFI	CFI	TLI	RMSEA	PCLOSE
Threshold values	**-**	**-**	**≤ 5**	**> 0.5**	**> 0.9**	**> 0.9**	**> 0.9**	**< 0.08**	**> 0.05**
Model 3	**414,71**	**237**	**1,75**	**0**	**0,908**	**0,959**	**0,952**	**0,048**	**0,649**

Table 17. Goodness of fit indices for the model 3

The fourth model indicates the mediation effect of management innovation. Graphical representation of this model could be found in Appendix VIII. From the Table 18 we could conclude that entrepreneurial orientation statistically significant and positively affect management innovation, performance against competitors, strategic and financial performance: the p-values for these coefficients are lower than the significance level of 0.05. At the same time the influence of management innovation on a firm performance constructs are not significant in this model (the p-values for these coefficients are much higher than 0.05).

Path			Estimate	S.E.	C.R.	P-value
MI	<---	**EO**	**0,289**	**0,064**	**4,498**	***
FPS	<---	**EO**	**0,44**	**0,07**	**6,262**	***
FPS	<---	**MI**	**-0,05**	**0,068**	**-0,739**	**0,46**
PACSI	<---	**EO**	**0,164**	**0,07**	**2,33**	**0,02**
PACSI	<---	**FPS**	**1,169**	**0,089**	**13,176**	***
PACSI	<---	**MI**	**-0,041**	**0,064**	**-0,643**	**0,52**
EOCA	<---	**EO**	**0,864**	**0,071**	**12,171**	***
EOI	<---	**EO**	**0,808**	**0,069**	**11,751**	***
SA	<---	**EO**	**0,066**	**0,067**	**0,994**	**0,32**
EOFRT	<---	**EO**	**0,524**	**0,067**	**7,803**	***
EOMP	<---	**EO**	**1**			
SP	<---	**EO**	**0,37**	**0,053**	**7,037**	***
SP	<---	**MI**	**0,045**	**0,045**	**1,009**	**0,313**

Table 18. Unstandartised regression weights for the model with mediation effect of MI

Besides, this model has quiet good fit. Table 19 illustrates the goodness of fit indices for this model: GFI = 0.912 (>0.9), CFI = 0.963 (>0.9), TLI = 0.957 (>0.9), RMSEA = 0.045 (<0.08) and PCLOSE = 0.829 (>0.05).

CFA model	χ^2	df	χ^2/df	p-value	GFI	CFI	TLI	RMSEA	PCLOSE
Threshold values	-	-	≤ 5	> 0.5	> 0.9	> 0.9	> 0.9	< 0.08	> 0.05
Model 4	**393,69**	**236**	**1,668**	**0**	**0,912**	**0,963**	**0,957**	**0,045**	**0,829**

Table 19. Goodness of fit indices for the model with mediation effect of MI

In addition, the model with a mediation allows to analyse direct and indirect effects of entrepreneurial orientation on a firm performance measurements (FPS, SP, and PACSI). Thus, Table 20 provides standardised effects on management innovation, performance against competitors, strategic and financial performance and related to them p-values.

EO effect on the construct:	Effects	Standardized Effects	p-value
MI	**Direct**	**0,3**	**0,01**
	Indirect	**0**	**...**
	Total	**0,3**	**0,01**
SP	**Direct**	**0,383**	**0,01**
	Indirect	**0,315**	**0,01**
	Total	**0,698**	**0,01**
FPS	**Direct**	**0,445**	**0,01**
	Indirect	**-0,015**	**0,553**
	Total	**0,43**	**0,01**
PACSI	**Direct**	**0,115**	**0,026**
	Indirect	**0,342**	**0,01**
	Total	**0,457**	**0,01**

Table 20. Total, direct and direct effects of entrepreneurial orientation

Based on the given results we could conclude that entrepreneurial orientation has a significant positive indirect effect on strategic performance and performance against competitors. However, indirect effect on a financial performance is insignificant: the p-value equals to 0.553, which is much higher than 0.05. Therefore, we could conclude that hypothesis H4(a) stated that MI mediates the relationship between entrepreneurial orientation and financial performance could be rejected.

Moreover, in order to check what types of mediation are presented in the model we used the following rules: (1) for full mediation: If the direct effect is significant prior to adding a mediator in the model; if p-value for indirect effect is lower than the significance level of 0.05, and at the same time direct effect is higher than 0.05; (2) for partial mediation: if both indirect and direct effects are lower than 0.05, and the total effect is significant as well. From the Table 20 we could conclude that management innovation has a significant partial mediation effect of EO on performance against competitors and strategic performance. Therefore, the hypotheses H4(b) and H4(c) claimed that MI mediates the relationship between EO and strategic performance, and EO and performance against competitors could not be rejected at 0.05 significance level.

8. DISCUSSIONS AND CONCLUSIONS

8.1. Summary

This paper examines the role of management innovation and entrepreneurial orientation in performance against competitors, financial and strategic performance. In order to investigate the relationship between these constructs, we proposed to consider two frameworks: (1) the theoretical model illustrating the moderation effect of management innovation on the relationship between entrepreneurial orientation and firm performance constructs; (2) the theoretical model assumed the mediation effect of management innovation on entrepreneurial orientation influenced on firm performance measurements. Thus, this section firstly provides summary of testing models, and then highlights the results of hypotheses testing.

The first model was aimed to test the moderation effect of management innovation. It was proved that management innovation statistically significant strengthen the relationship between EO and strategic performance. The model proved that, the moderator variable has a statistically positive influence on the relationship between entrepreneurial orientation and financial performance (Table 21).

Path coefficients	Coefficients	p-value
EO - FPS	0,453	***
EO - SP	0,394	***
EO-PACSI	0,153	0,005
EO_MI - FPS	0,061	0,008
MI - FPS	-0,073	0,182
Squared multiple correlation (% of variance explained)		
FPS	20,6%	
SP	83,2%	
PACSI	74,8%	
Goodness of fit indices		
CMIN/DF	2,257	
GFI	0,916	
TLI	0,942	
CFI	0,95	
RMSEA	0,051	
PCLOSE	0,349	

Table 21. Summary for model with moderation effect

The second model indicated the mediation effect of management innovation of EO on firm performance measurements. Table 22 shows the summary of SEM analysis of four models used in the process of mediation effect testing. It was found that management innovation partially mediates the effect of EO on performance against competitors and strategic performance.

	Model 1 (Step 1)		Model 2 (Step 2)		Model 3 (step 3)		Model 4 (step 4)	
Path coefficients	**Coef.**	**P-value**	**Coef.**	**P-value**	**Coef.**	**P-value**	**Coef.**	**P-value**
EO - FPS	**0,422**	***			**0,428**	***	**0,44**	***
EO - SP	**0,38**	***			**0,365**	***	**0,37**	***
EO-PACSI	**0,15**	**0,022**			**0,159**	**0,016**	**0,164**	**0,02**
EO - MI			**0,292**	***			**0,289**	***
MI - FPS					**-0,028**	**0,663**	**-0,05**	**0,46**
MI - PACSI					**-0,032**	**0,588**	**-0,041**	**0,52**
MI - SP					**0,063**	**0,129**	**0,045**	**0,313**
Squared multiple correlation (% of variance explained)								
MI			**9,2%**		**0,0%**		**9,0%**	
FPS	**18,5%**				**19,1%**		**18,7%**	
SP	**82,8%**				**82,9%**		**83,0%**	
PACSI	**75,0%**				**75,3%**		**75,0%**	
Goodness of fit indices								
CMIN/DF	**1,76**		**1,725**		**1,75**		**1,668**	
GFI	**0,92**		**0,939**		**0,908**		**0,912**	
TLI	**0,959**		**0,957**		**0,952**		**0,957**	
CFI	**0,966**		**0,965**		**0,959**		**0,963**	
RMSEA	**0,048**		**0,047**		**0,048**		**0,045**	
PCLOSE	**0,604**		**0,629**		**0,649**		**0,829**	

Table 22. Comparison of four models used for testing mediation effect

For the purpose of the study, we tested five hypotheses. The results of hypothesis testing are presented in the Table 23. Therefore, we could conclude that hypotheses H2(b), H2(c), H4(a), H5(a), H5(b), and H5(c) are rejected, while the hypotheses H1(a), H1(b), H1(c), H2(a), H4(b), H4(c) and H3 cannot be rejected at a significance level of 5%.

Hypothesis	Description	Rejected/Not rejected
H1(a)	**Entrepreneurial orientation has a positive influence on financial performance.**	**Not rejected**
H1(b)	**Entrepreneurial orientation has a positive influence on performance against competitors.**	**Not rejected**
H1(c)	**Entrepreneurial orientation has a positive influence on strategic performance.**	**Not rejected**
H2(a)	**Management innovation strengthens the influence of entrepreneurial orientation on financial performance.**	**Not rejected**
H2(b)	**Management innovation strengthens the influence of entrepreneurial orientation on performance against competitors.**	**Rejected**
H2(c)	**Management innovation strengthens the influence of entrepreneurial orientation on strategic performance.**	**Rejected**
H3	**Entrepreneurial orientation has a positive influence on management innovation.**	**Not rejected**
H4(a)	**Management innovation mediates the relationship between entrepreneurial orientation and financial performance.**	**Rejected**
H4(b)	**Management innovation mediates the relationship between entrepreneurial orientation and performance against competitors.**	**Not rejected**
H4(c)	**Management innovation mediates the relationship between entrepreneurial orientation and strategic performance.**	**Not rejected**
H5(a)	**Management innovation positively effect on financial performance.**	**Rejected**
H5(b)	**Management innovation positively effect on performance against competitors.**	**Rejected**
H5(c)	**Management innovation positively effect on strategic performance.**	**Rejected**

Table 23. The results of hypotheses testing

In this term, the research proposes that management innovation strengthen the relationship between entrepreneurial orientation and financial performance, because there is a significant relationship between interaction variable (EO_MI) and financial performance. In other words, the higher is management innovation the more powerful is influence of entrepreneurial orientation on

a financial performance of company. when management innovation interacts with entrepreneurial orientation.

Besides, this study confirms that management innovation has a significant partial mediation effect on performance against competitors and strategic performance, since both indirect and direct effects of EO on these firm performance measurements are lower than 0.05, and the total effect of EO is significant as well.

8.2.   Theoretical contribution

From the previous literature, we found that the influence of management innovation on financial and non-financial performance, such as the reputation or brand of the company, is still a contentious issue. Although there are studies that confirmed the significant positive influence of MI on financial performance, there are papers that rejected this relationship and supported a significant link between MI and non-financial indicators instead. From the theoretical perspective, researchers highlight performance as one of the critical factors among the outcomes of management innovation. In addition to firm performance, management innovation relates to firm-level entrepreneurship: the role of introducing new practices and processes is significant for development innovations, economic growth and organisation efficiency (Schumpeter, 1934, 1943; Walker et al., 2015). Based on the previous research, we propose the models that illustrated the relationship between EO, MI and firm performance measurements and stated the hypotheses.

Besides, based on previous research dedicated to entrepreneurial orientation and firm performance, we found inconsistencies between measurements used in studies and theoretical justification. This research tries to eliminate this difference. Thus, we propose that (1) EO should be measured as a five-dimensional construct according to Lumpkin and Dess (1996), however, researchers usually use three- or four-dimensional construct to simplify the data collection process; (2) firm performance measurements – performance against competitors, financial and strategic performance – should be considered individually as they relate to different levels of performance (Venkatraman and Ramanujam, 1986);

Overall, the study provides a new perspective on the relationship between entrepreneurial orientation, management innovation and firm performance constructs. It involves considering the impact of management innovations that the majority of modern companies are actively implementing. Thus, the essential theoretical contribution is the evaluated models, which explain the role of management innovation on entrepreneurial orientation, performance against

competitors, financial and strategic performance and test the hypotheses that were already stated in previous research and new ones dedicated to the relationship between MI and EO and combined influence of MI and EO on firm performance.

The findings illustrate that entrepreneurial orientation indeed has a significant positive influence on all performance measurements, which is consistent with previous studies. The hypotheses dedicated to the direct effect of MI on firm performance were rejected, which is inconsistent with some previous papers devoted to this topic. However, since this topic is still developing and there is no unambiguous answer to how management innovation relates to firm performance, we think it is also a significant contribution to the strategic management research and could be even more investigated further (for example, with a broader sample or different locations).

The results also show that management innovation moderates the relationship between entrepreneurial orientation and financial performance and between entrepreneurial orientation and strategic performance. In addition, the results prove that management innovation is a mediator between entrepreneurial orientation, strategic performance, and performance against competitors. In other words, entrepreneurial orientation has both direct and indirect effect on a firm performance constructs. Overall, findings highlight the importance of management innovation and its influence on the relationship between EO and firm performance and propose a new perspective on this link.

8.3. Managerial implications

The practical implications of this study could be divided into two main directions related to the model with moderation effect and with mediation effect. The first one proves that implementing new practices and processes in an organisation could significantly positively affect the financial and strategic performance of those firms with a higher entrepreneurial drive. This finding is related to all the firms, especially for small and medium enterprises, since they tend to be more entrepreneurial than large companies. In practice, it means that entrepreneurial companies that introduced management innovations within organisations, such as remote work, modern technologies for efficient communication within an organisation, and self-managing teams, more likely show higher financial performance than other firms.

The second implication is that management innovation indirectly affects strategic performance and performance against competitors through entrepreneurial orientation. In other words, this finding means that firms that implemented management innovations have stronger EO

influence on firm performance measurements: particularly, strategic performance and performance against competitors. Practically, this result refers to the two key points: entrepreneurial companies that introduced novel management practices and procedures (1) show higher strategic performance: for example, higher market share and gained strategic advantages; (2) show higher performance compared to their competitors in terms of financial indicators, such as EBIT, ROI and ROS, compared to the industry average. Therefore, we could conclude that implementing management innovations within a company helps to reach the organisation's strategic goals, gain the competitive advantage of this firm, and perform much better in the market than competitors.

8.4.   Limitations and future research directions

This study has several limitations regarding the data analysis. Firstly, we did not pay much attention to the relationship between financial performance, performance against competitors and strategic performance since it is not the study's goal. However, the connection between these three performance measurements is essential and leads to significant models' improvements. Thus, investigation dedicated to the relationship between financial performance, performance against competitors and strategic performance could be considered as a possible research direction in the future.

Besides, the sample used for this study consists only of Finnish enterprises. In this sense, it can be concluded that this study can be expanded geographically in order to test the stability of the results obtained.

In addition, we did not check whether the results differ for different sized companies and enterprises representing various industries. Whether these results differ between companies with other characteristics is an open question. Consequently, this could also be an essential follow-up to this study.

Taking into account all the limitations mentioned above, we could define possible future research directions regarding this topic:

- To investigate more closely the relationship between financial performance, performance against competitors and strategic performance;

- To expand the sample to test the stability of the results to the companies from different countries;

- To test how different are the results for companies from various industries;

- To test how different are the results for huge, large and medium firms.

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APPENDICES

Appendix I.

Details about the studied sample

Category of companies	Frequency	Percent	Valid Percent	Cumulative Percent	Percent computed without missing values
Valid	170	35,4	35,4	35,4	
Large company	133	27,7	27,7	63,1	42,9
Medium sized company	135	28,1	28,1	91,3	43,5
Very large company	42	8,8	8,8	100	13,5
Total	480	100	100		100

Table 24. Categories of subsidiaries' frequencies

Industries	Frequency	Percent	Valid Percent	Cumulative Percent	Percent computed without missing values
Valid	170	35,4	35,4	35,4	
B - Mining and quarrying	4	0,8	0,8	36,3	1,3
C - Manufacturing	84	17,5	17,5	53,8	27,1
D - Electricity, gas, steam and air conditioning supply	1	0,2	0,2	54	0,3
E - Water supply; sewerage, waste management and remediation activities	1	0,2	0,2	54,2	0,3
F - Construction	11	2,3	2,3	56,5	3,5
G - Wholesale and retail trade; repair of motor vehicles and motorcycles	113	23,5	23,5	80	36,5
H - Transportation and storage	17	3,5	3,5	83,5	5,5
I - Accommodation and food service activities	1	0,2	0,2	83,8	0,3
J - Information and communication	19	4	4	87,7	6,1
K - Financial and insurance activities	9	1,9	1,9	89,6	2,9
L - Real estate activities	2	0,4	0,4	90	0,6
M - Professional, scientific and technical activities	31	6,5	6,5	96,5	10,0
N - Administrative and support service activities	15	3,1	3,1	99,6	4,8
R - Arts, entertainment and recreation	2	0,4	0,4	100	0,6
Total	480	100	100		100

Table 25. Industries related to the subsidiaries' operations

Firms' category	Indicator		Statistic	Std. Error
Large firms	Mean		104,99	12,095
	95% Confidence Interval for Mean	Lower Bound	81,04	
		Upper Bound	128,95	
	5% Trimmed Mean		84,08	
	Median		67	
	Variance		17116,802	
	Std. Deviation		130,831	
	Minimum		6	
	Maximum		743	
	Range		737	
	Interquartile Range		91	
	Skewness		3,242	0,224
	Kurtosis		12,044	0,444
Medium sized firms	Mean		22,86	1,764
	95% Confidence Interval for Mean	Lower Bound	19,36	
		Upper Bound	26,36	
	5% Trimmed Mean		21,39	
	Median		19	
	Variance		289,426	
	Std. Deviation		17,013	
	Minimum		1	
	Maximum		83	
	Range		82	
	Interquartile Range		25	
	Skewness		1,225	0,25
	Kurtosis		1,27	0,495
Very large firms	Mean		762,73	355,65
	95% Confidence Interval for Mean	Lower Bound	38,29	
		Upper Bound	1487,16	
	5% Trimmed Mean		401,13	
	Median		307	
	Variance		4174061,96	
	Std. Deviation		2043,052	
	Minimum		10	
	Maximum		11832	
	Range		11822	
	Interquartile Range		517	
	Skewness		5,284	0,409
	Kurtosis		29,202	0,798

Table 26. Number of employees according to subsidiaries' categories

Firms' category	Indicator		Statistic	Std. Error
Large firms	Mean		243,62	49,943
	95% Confidence Interval for Mean	Lower Bound	144,71	
		Upper Bound	342,54	
	5% Trimmed Mean		153,16	
	Median		66	
	Variance		291832,219	
	Std. Deviation		540,215	
	Minimum		0	
	Maximum		3731	
	Range		3731	
	Interquartile Range		236	
	Skewness		5,029	0,224
	Kurtosis		29,294	0,444
Medium sized firms	Mean		108,37	34,104
	95% Confidence Interval for Mean	Lower Bound	40,63	
		Upper Bound	176,1	
	5% Trimmed Mean		60,61	
	Median		21	
	Variance		108165,713	
	Std. Deviation		328,886	
	Minimum		0	
	Maximum		2996	
	Range		2996	
	Interquartile Range		91	
	Skewness		7,629	0,25
	Kurtosis		66,046	0,495
Very large firms	Mean		259,58	47,675
	95% Confidence Interval for Mean	Lower Bound	162,47	
		Upper Bound	356,69	
	5% Trimmed Mean		234,08	
	Median		152	
	Variance		75004,502	
	Std. Deviation		273,869	
	Minimum		11	
	Maximum		990	
	Range		979	
	Interquartile Range		367	
	Skewness		1,376	0,409
	Kurtosis		1,166	0,798

Table 27. Number of companies in corporate group according to subsidiaries' categories

Appendix II.

Details about constructs and items

Second-order construct	Construct Code	First-order construct	Item code	Item	Literature
Entrepreneurial orientation (EO)	**SA**	**Autonomy**	**sa4_1**	**Development of new products/services**	**Roth and Morrison (1992) and Edwards et al. (2002)**
			sa6_1	**Defining your service/manufacturing processes**	
			sa7_1	**Monitoring and controlling quality**	
			sa9_1	**Entering new international markets**	
	EOI	**Innovativeness**	**eoi3_1**	**In general, the top managers of our subsidiary have a strong tendency to be ahead of others in introducing novel ideas or products**	**Lumpkin and Dess (2001)**
			eoi4_1	**In general, the top managers of our subsidiary favor a strong emphasis on R&D, technological leadership, and innovations**	
	EOCA	**Competitive aggressiveness**	**eoca1_1**	**Our subsidiary is very aggressive and intensely competitive**	**Lumpkin and Dess (2001)**
			eoca2_1	**Our subsidiary typically adopts a very competitive "undo-the-competitors" posture**	
	EOMP	**Market proactiveness**	**eomp2_1**	**In dealing with competitors, our subsidiary is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.**	**Lumpkin and Dess (2001)**

Second-order construct	Construct Code	First-order construct	Item code	Item	Literature
			eomp3_1	**In dealing with competitors, our subsidiary typically initiates actions which competitors then respond to**	
	EOFRT	**Firm risk taking**	eofrt1_1	**A strong proclivity for high risk projects (with chances of very high returns)**	**Lumpkin and Dess (2001)**
			eofrt2_1	**When confronted with decisions involving uncertainty, our subsidiary typically adopts a bold posture in order to maximize the probability of exploiting opportunities**	
			eofrt3_1	**Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the subsidiary's objectives**	
-	**FPS**	**Financial Performance**	**fps3_1**	**Gross profit margin**	**Covin, Prescott and Slevin (1990)**
			fps4_1	**Return on investment**	
-	**SP**	**Strategic Performance**	**sp1_1**	**We have gained strategic advantages over our competitors**	**Schilke (2014)**
			sp2_1	**We have a large market share**	
			sp3_1	**Overall, we are more successful than our major competitors**	
-	**PACSI**	**Performance against competitors**	**pacsi1_1**	**Our EBIT (earnings before interest and taxes) is continuously above industry average**	**Schilke (2014)**
			pacsi2_1	**Our ROI (return on investment) is continuously above industry average**	

Second-order construct	Construct Code	First-order construct	Item code	Item	Literature
			pacsi3_1	**Our ROS (return on sales) is continuously above industry average**	
-	**MI**	**Management Innovativeness**	mirec2_1	**We regularly make changes to our employees' tasks and functions**	**Vaccaro et al. (2012)**
			mirec3_1	**Our subsidiary regularly implements new management systems**	
			mirec6_1	**We continuously alter certain elements of the organizational structure**	

Table 28. Key constructs and items in the research

Appendix III.

Descriptive statistics for the data

Item	N		Mean	Median	Std. Deviation	Variance	Skewness	Kurtosis
	Valid	**Missing**						
sa4	**324**	**1**	**3,59**	**4**	**1,068**	**1,14**	**-0,435**	**-0,588**
sa6	**323**	**2**	**3,76**	**4**	**1,087**	**1,18**	**-0,735**	**-0,142**
sa7	**321**	**4**	**3,92**	**4**	**1,179**	**1,39**	**-0,999**	**0,099**
sa9	**320**	**5**	**2,13**	**2**	**1,2**	**1,439**	**0,876**	**-0,194**
eoi3	**319**	**6**	**3,51**	**4**	**0,961**	**0,924**	**-0,354**	**-0,212**
eoi4	**317**	**8**	**3,21**	**3**	**1,062**	**1,127**	**-0,153**	**-0,53**
eoca1	**324**	**1**	**3,18**	**3**	**0,978**	**0,957**	**-0,219**	**-0,354**
eoca2	**321**	**4**	**3,88**	**4**	**0,91**	**0,827**	**-0,723**	**0,322**
eomp2	**323**	**2**	**3,23**	**3**	**0,976**	**0,952**	**-0,224**	**-0,261**
eomp3	**324**	**1**	**3,27**	**3**	**1,019**	**1,038**	**-0,303**	**-0,392**
eofrt1	**325**	**0**	**2,05**	**2**	**0,979**	**0,958**	**0,702**	**-0,135**
eofrt2	**323**	**2**	**3,22**	**3**	**0,994**	**0,987**	**-0,192**	**-0,445**
eofrt3	**322**	**3**	**2,96**	**3**	**1,061**	**1,126**	**-0,086**	**-0,674**
fps3	**322**	**3**	**3,33**	**3**	**1,01**	**1,02**	**-0,247**	**-0,472**
fps4	**322**	**3**	**3,41**	**3**	**1,143**	**1,307**	**-0,342**	**-0,621**
sp1	**321**	**4**	**3,67**	**4**	**0,94**	**0,883**	**-0,623**	**0,06**
sp2	**323**	**2**	**3,56**	**4**	**1,166**	**1,359**	**-0,496**	**-0,632**
sp3	**322**	**3**	**3,57**	**4**	**1,078**	**1,162**	**-0,366**	**-0,563**
pacsi1	**321**	**4**	**3,51**	**4**	**1,197**	**1,432**	**-0,395**	**-0,733**
pacsi2	**320**	**5**	**3,45**	**4**	**1,157**	**1,339**	**-0,342**	**-0,702**
pacsi3	**320**	**5**	**3,43**	**3**	**1,098**	**1,205**	**-0,317**	**-0,51**
mirec2	**325**	**0**	**2,98**	**3**	**0,925**	**0,855**	**-0,017**	**-0,289**
mirec3	**325**	**0**	**2,77**	**3**	**0,954**	**0,911**	**0,127**	**-0,438**
mirec6	**323**	**2**	**2,98**	**3**	**1,096**	**1,201**	**-0,17**	**-0,854**

Table 29. Descriptive statistics for the initial data

Graphical representation of the first-order and second-order models
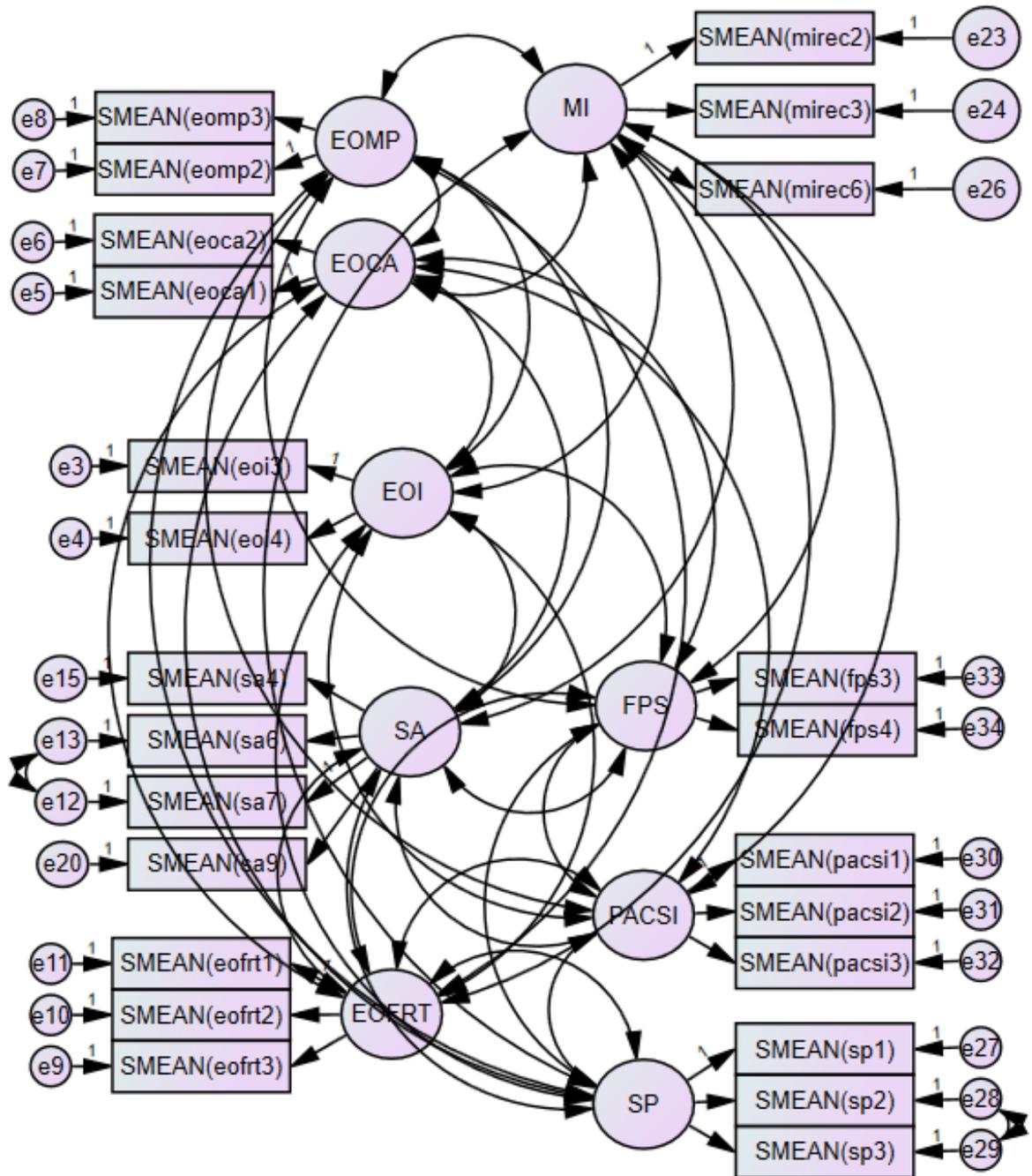

Figure 4. Graphical illustration of the first-order model (CFA)
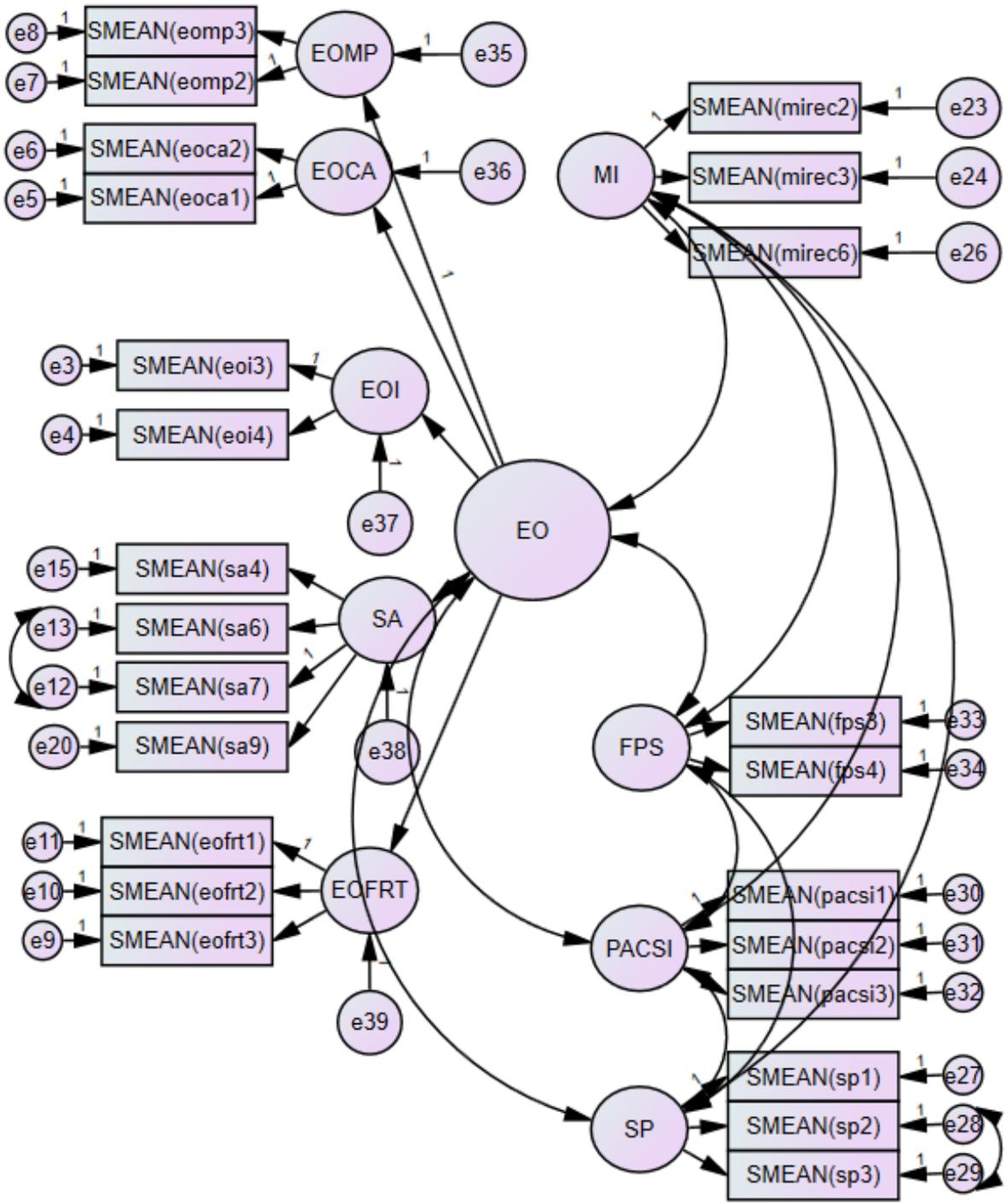
Figure 5. Graphical illustration of the second-order model (CFA)

Appendix V.

Standardised factor loadings for the first-order and second-order models

Construct/Item	Path	Construct	Estimate
eoi3_1	<---	EOI	0,949
eoi4_1	<---	EOI	0,601
eoca1_1	<---	EOCA	0,79
eoca2_1	<---	EOCA	0,798
eomp2_1	<---	EOMP	0,87
eomp3_1	<---	EOMP	0,787
eofrt1_1	<---	EOFRT	0,488
eofrt2_1	<---	EOFRT	0,938
eofrt3_1	<---	EOFRT	0,561
sa4_1	<---	SA	0,781
sa6_1	<---	SA	0,725
sa7_1	<---	SA	0,659
sa9_1	<---	SA	0,584
mirec2_1	<---	MI	0,814
mirec3_1	<---	MI	0,794
mirec6_1	<---	MI	0,703
sp1_1	<---	SP	0,804
sp2_1	<---	SP	0,644
sp3_1	<---	SP	0,843
pacsi1_1	<---	PACSI	0,928
pacsi2_1	<---	PACSI	0,908
pacsi3_1	<---	PACSI	0,916
fps3_1	<---	FPS	0,76
fps4_1	<---	FPS	0,903

Table 30. Standartised factor loadings for the first-order model

Construct/Item	Path	Construct	Estimate
EOCA	<---	EO	0,868
EOI	<---	EO	0,695
SA	<---	EO	0,07
EOFRT	<---	EO	0,792
EOMP	<---	EO	0,918
eoi3_1	<---	EOI	0,952
eoi4_1	<---	EOI	0,599
eoca1_1	<---	EOCA	0,791
eoca2_1	<---	EOCA	0,797
eomp2_1	<---	EOMP	0,865
eomp3_1	<---	EOMP	0,791
eofrt1_1	<---	EOFRT	0,478
eofrt2_1	<---	EOFRT	0,957
eofrt3_1	<---	EOFRT	0,55
sa4_1	<---	SA	0,794
sa6_1	<---	SA	0,712
sa7_1	<---	SA	0,651
sa9_1	<---	SA	0,582
mirec2_1	<---	MI	0,807
mirec3_1	<---	MI	0,797
mirec6_1	<---	MI	0,709
sp1_1	<---	SP	0,804
sp2_1	<---	SP	0,644
sp3_1	<---	SP	0,843
pacsi1_1	<---	PACSI	0,928
pacsi2_1	<---	PACSI	0,907
pacsi3_1	<---	PACSI	0,916
fps3_1	<---	FPS	0,765
fps4_1	<---	FPS	0,897

Table 31. Standartised factor loadings for the second-order model

Appendix VI.

Goodness of fit indices for the first-order and second-order models

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	491,263	213	0	2,306
Saturated model	300	0	0		
Independence model	24	6774,11	276	0	24,544
RMR, GFI					
Model	RMR	GFI	AGFI	PGFI	
Default model	0,032	0,925	0,895	0,657	
Saturated model	0	1			
Independence model	0,228	0,301	0,24	0,276	
Baseline Comparisons					
Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0,927	0,906	0,958	0,945	0,957
Saturated model	1		1		1
Independence model	0	0	0	0	0
Parsimony-Adjusted Measures					
Model	PRATIO	PNFI	PCFI		
Default model	0,772	0,716	0,739		
Saturated model	0	0	0		
Independence model	1	0	0		
NCP					
Model	NCP	LO 90	HI 90		
Default model	278,263	217,553	346,688		
Saturated model	0	0	0		
Independence model	6498,11	6233,317	6769,27		
FMIN					
Model	FMIN	F0	LO 90	HI 90	
Default model	1,026	0,581	0,454	0,724	
Saturated model	0	0	0	0	
Independence model	14,142	13,566	13,013	14,132	
RMSEA					
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	0,052	0,046	0,058	0,266	
Independence model	0,222	0,217	0,226	0	
AIC					
Model	AIC	BCC	BIC	CAIC	
Default model	665,263	674,844	1028,382	1115,382	
Saturated model	600	633,04	1852,136	2152,136	
Independence model	6822,11	6824,753	6922,281	6946,281	
ECVI					
Model	ECVI	LO 90	HI 90	MECVI	
Default model	1,389	1,262	1,532	1,409	
Saturated model	1,253	1,253	1,253	1,322	
Independence model	14,242	13,69	14,808	14,248	
HOELTER					
Model	HOELTER .05	HOELTER .01			
Default model	242	258			
Independence model	23	24			

Table 32. Model fit summary for the first-order model

CMIN					
Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	66	560,944	234	0	2,397
Saturated model	300	0	0		
Independence model	24	6774,11	276	0	24,544
RMR, GFI					
Model	RMR	GFI	AGFI	PGFI	
Default model	0,04	0,915	0,892	0,714	
Saturated model	0	1			
Independence model	0,228	0,301	0,24	0,276	
Baseline Comparisons					
Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	0,917	0,902	0,95	0,941	0,95
Saturated model	1		1		1
Independence model	0	0	0	0	0
Parsimony-Adjusted Measures					
Model	PRATIO	PNFI	PCFI		
Default model	0,848	0,778	0,805		
Saturated model	0	0	0		
Independence model	1	0	0		
NCP					
Model	NCP	LO 90	HI 90		
Default model	326,944	261,443	400,145		
Saturated model	0	0	0		
Independence model	6498,11	6233,317	6769,27		
FMIN					
Model	FMIN	F0	LO 90	HI 90	
Default model	1,171	0,683	0,546	0,835	
Saturated model	0	0	0	0	
Independence model	14,142	13,566	13,013	14,132	
RMSEA					
Model	RMSEA	LO 90	HI 90	PCLOSE	
Default model	0,054	0,048	0,06	0,122	
Independence model	0,222	0,217	0,226	0	
AIC					
Model	AIC	BCC	BIC	CAIC	
Default model	692,944	700,213	968,414	1034,414	
Saturated model	600	633,04	1852,136	2152,136	
Independence model	6822,11	6824,753	6922,281	6946,281	
ECVI					
Model	ECVI	LO 90	HI 90	MECVI	
Default model	1,447	1,31	1,599	1,462	
Saturated model	1,253	1,253	1,253	1,322	
Independence model	14,242	13,69	14,808	14,248	
HOELTER					
Model	HOELTER	HOELTER			
	.05	.01			
Default model	232	246			
Independence model	23	24			

Table 33. Model fit summary for the second-order model

Appendix VII.

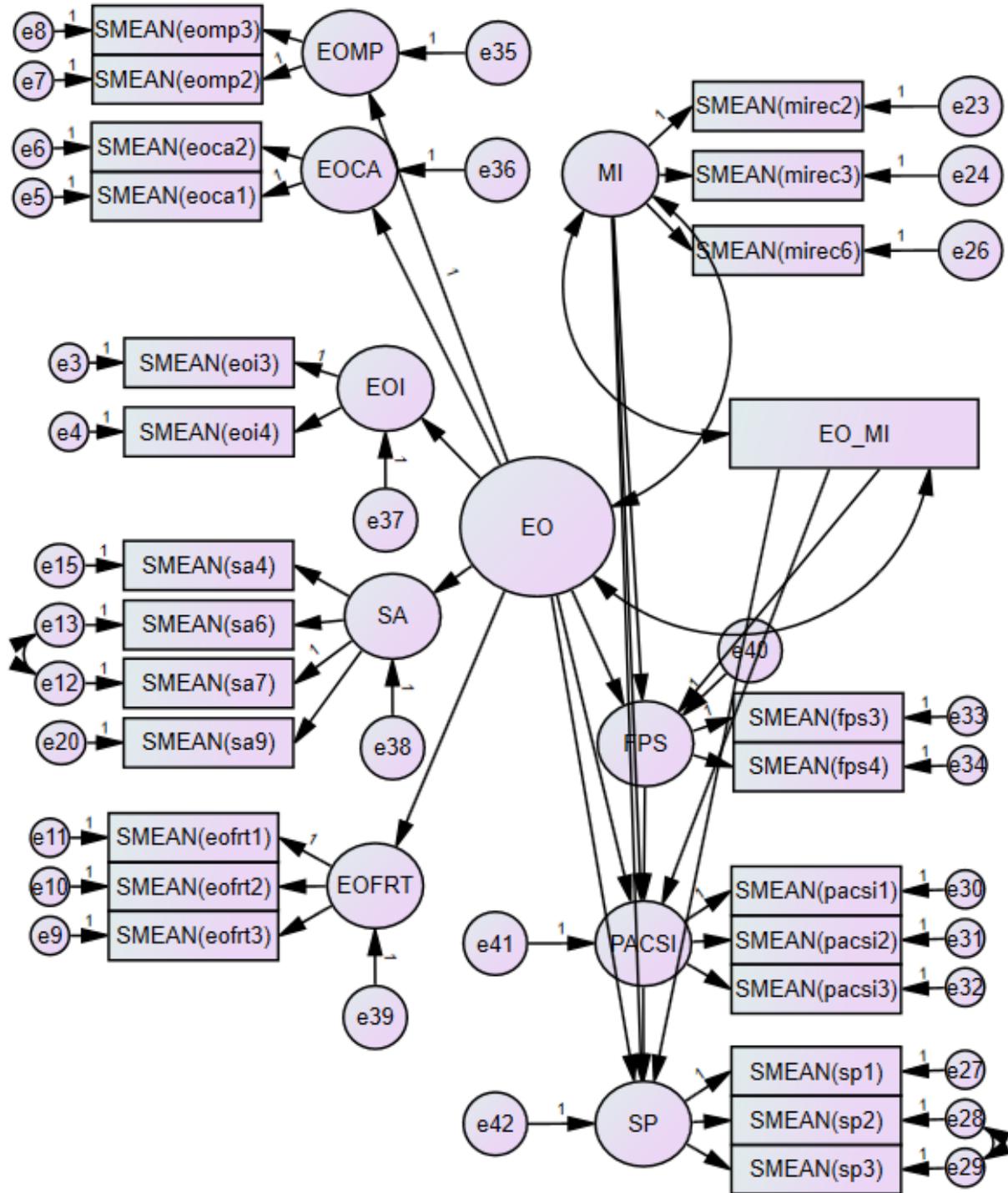Management innovation as a moderator in the model

Figure 6. Graphical illustration of the model with moderation effect of management innovation on the relationship between EO-FPS, EO-PACSI, and EO-SP
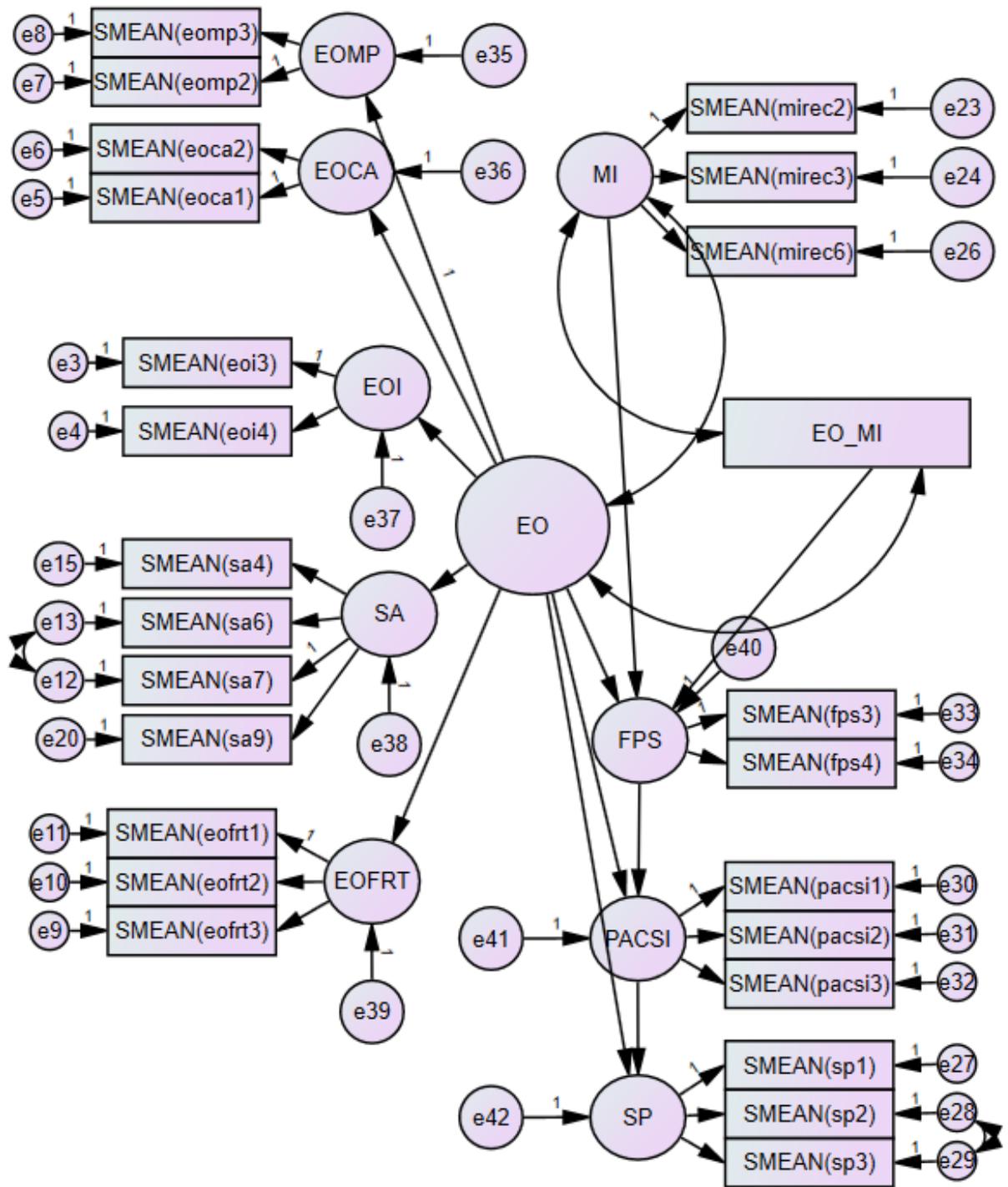
Figure 7. Graphical illustration of the model with moderation effect of management innovation on the relationship between EO-FPS

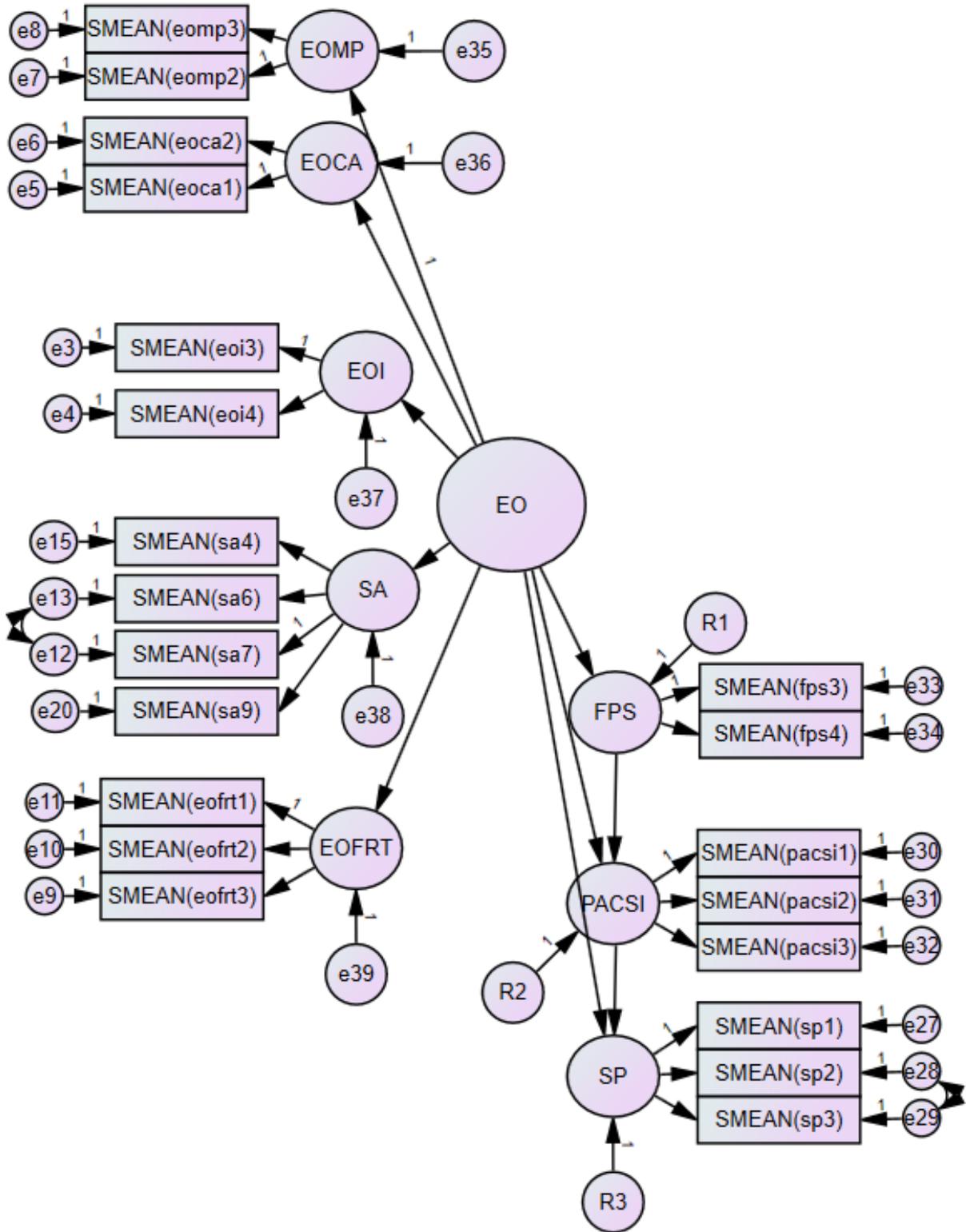Management innovation as a mediator in the model
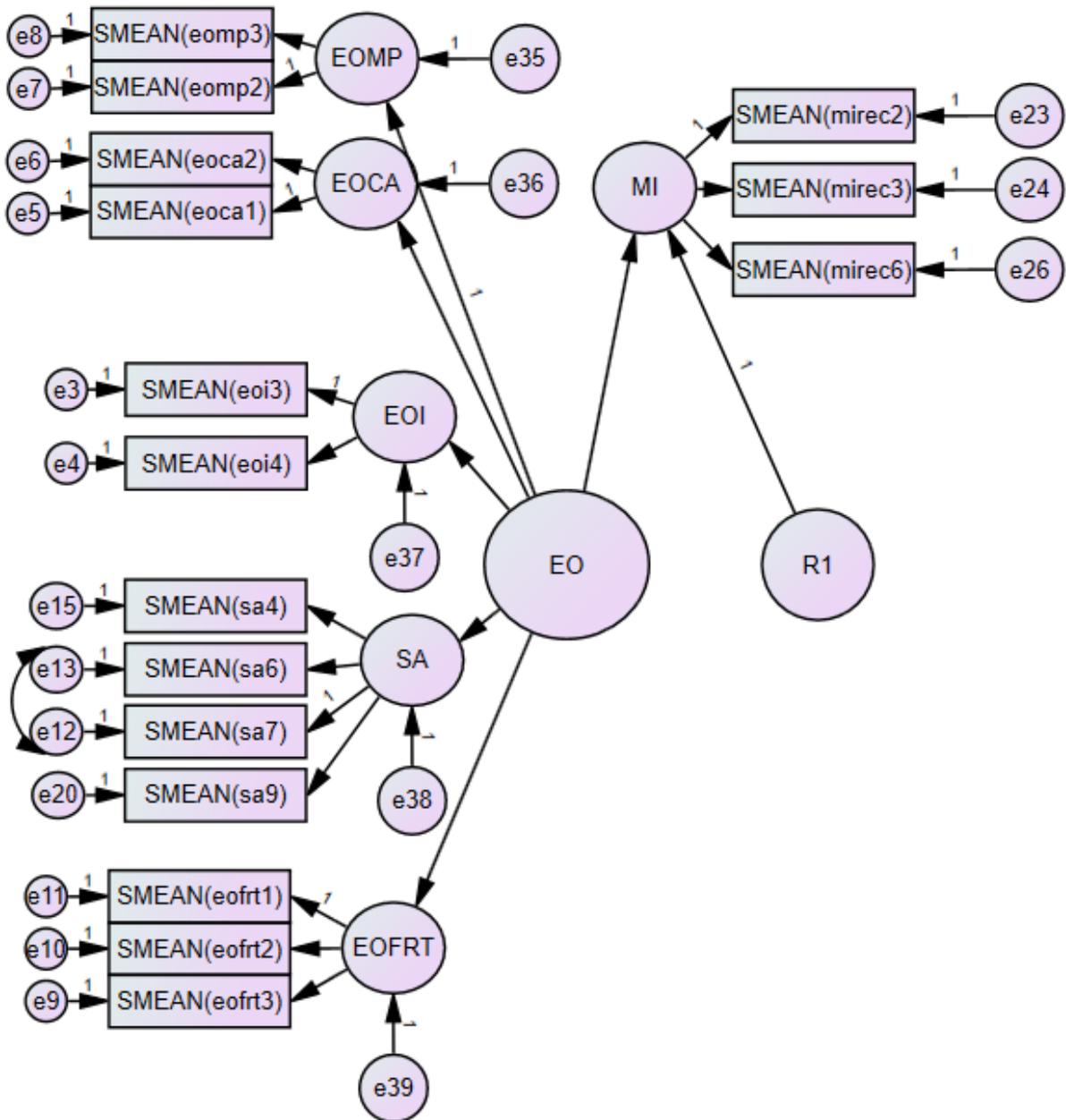

Figure 8. The model EO-FPS, PACSI, SP (step 1)
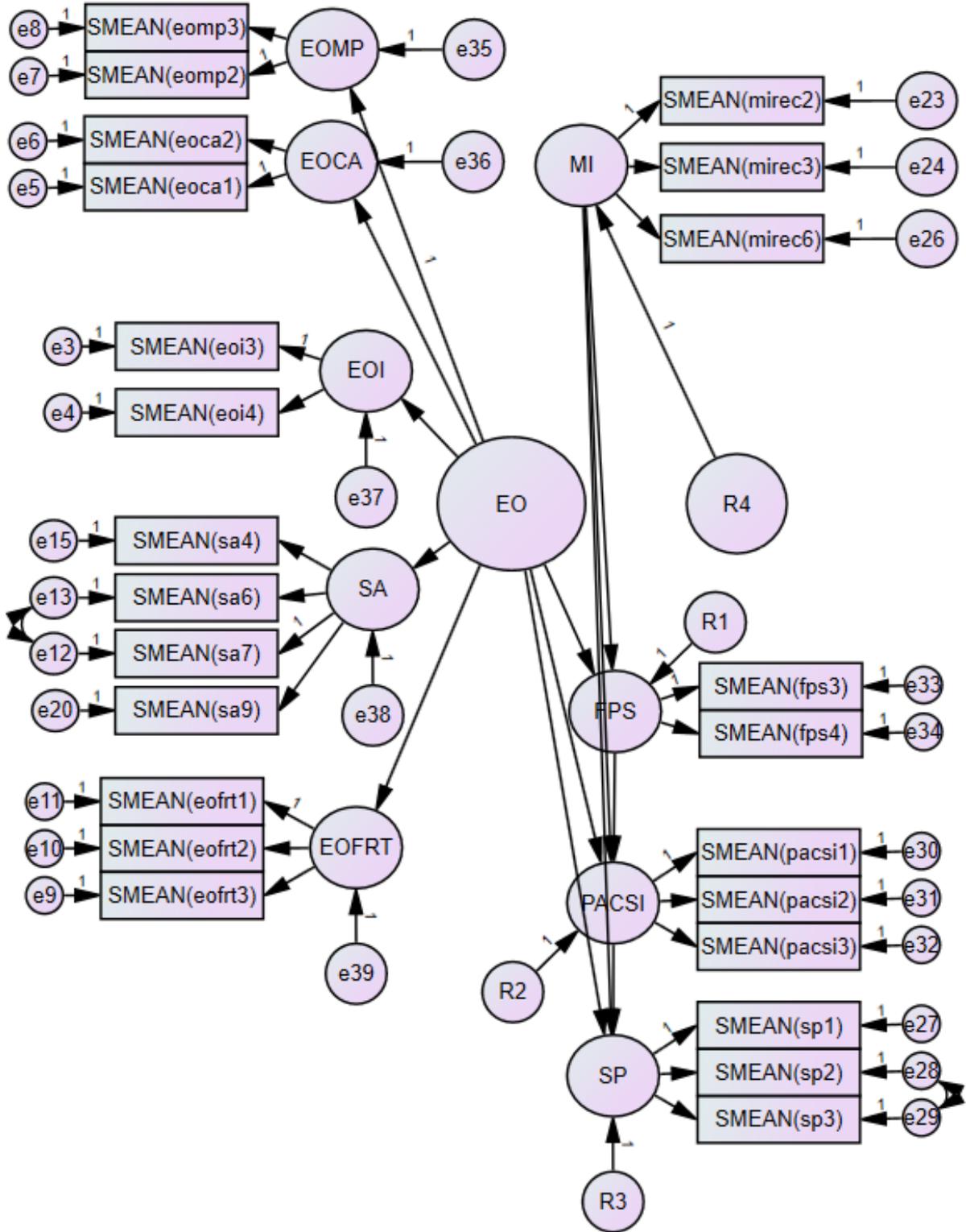
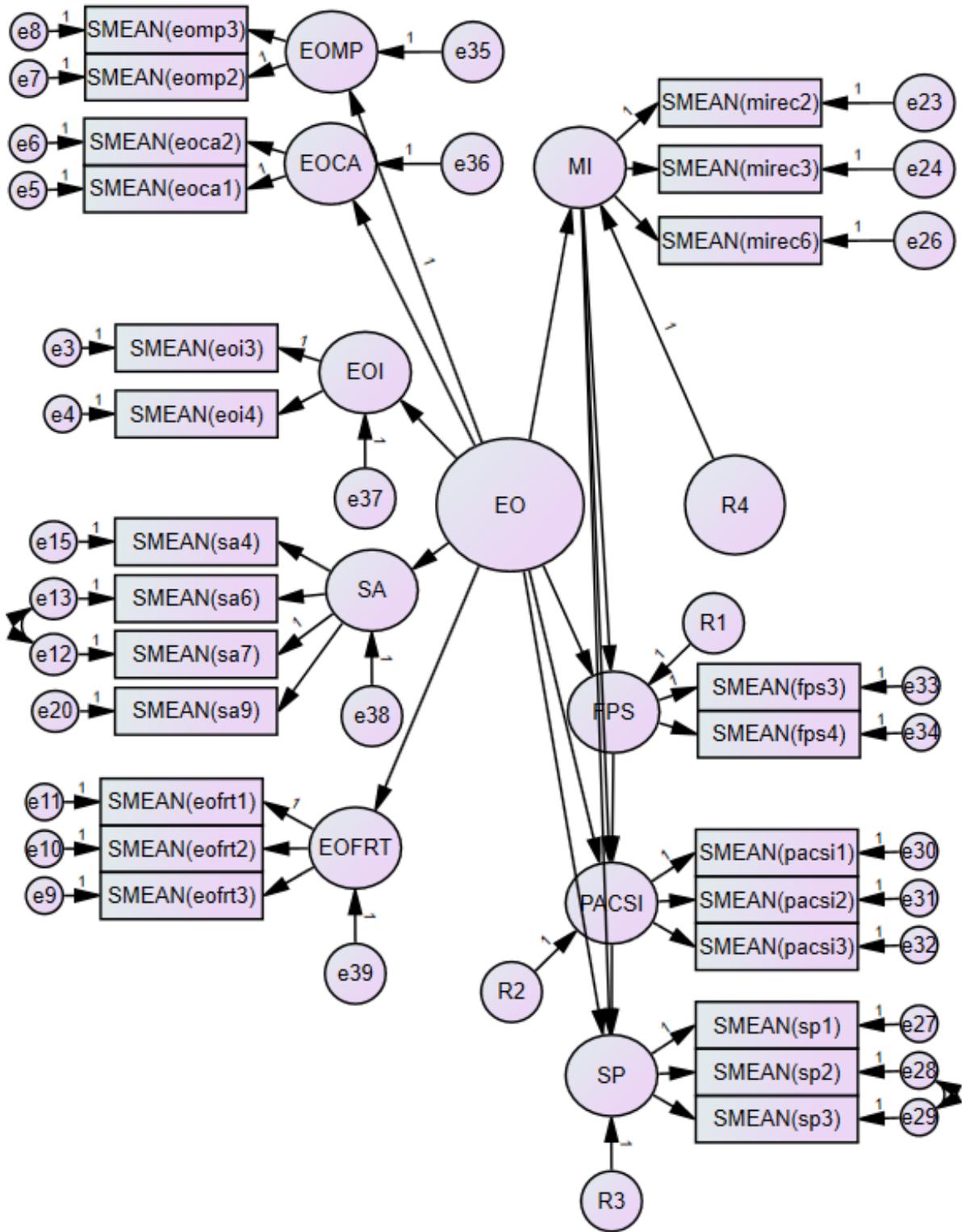Figure 9. The model EO-MI (step 2)

Figure 10. The model EO, MI-FPS, PACSI, SP (step 3)

Figure 11. The model with mediation effect of MI (step 4)