

The relationship between learning orientation, firm performance and market dynamism in MSMEs operating in technology parks in Poland: an empirical analysis

Jarosław Karpacz and Anna Wojcik-Karpacz

Department of Law and Social Science, Jan Kochanowski University of Kielce, Kielce, Poland

Abstract

Purpose – The authors analyzed the relationship between learning orientation (LO) and performance in micro, small and medium-sized enterprises (MSMEs) by investigating the moderating role of environmental dynamism to answer the need for systematic research of models between LO and firm performance (FP).

Design/methodology/approach – The authors investigated the (in)direct relationship between LO and FP. The authors collected data from 182 MSMEs operating in technology parks (TPs) in Poland. The authors used two methods in the quantitative empirical research. The authors used linear regression models to test the hypotheses, which allowed for a global assessment of relationships among all analyzed variables. Dynamic capabilities (DCs) framework guided the study.

Findings – The study results show that FP benefits from LO-related behaviors. LO is an important stimulant of FP. Meanwhile, the authors did not classify market dynamism (MD) as a moderator of the LO-FP relationship.

Research limitations/implications – By design, the authors surveyed only MSMEs open to participate in the survey, which potentially limits generalizability. Furthermore, future researchers may consider other types of strategic orientations (SOs) to further explain the impact of multiple SOs on FP in specific industries.

Originality/value – This article presents arguments that allow for recognizing LO as a strategic organizational factor shaping FP.

Keywords Learning orientation, Strategic orientations, Firm performance, Market dynamism

Paper type Research paper

Introduction

Considering the ever-changing nature of the economic environment in all the most important parameters of business, state, society, education, etc. (Koźmiński, 2020), enterprises are constantly looking for new opportunities on the market so that they can identify paths for their growth and prosperity (Wales, Beliaeva, Shirokova, Stettler, & Gupta, 2020). This reveals the need to understand the nature of new opportunities, the market forces that affect them, and the quality of learning necessary to implement them (Gnizy, Baker, & Grinstein, 2014).

For this purpose, scientists (Wales *et al.*, 2020; Baker, Mukherjee, & Perin, 2022; Lendowski, Grotenhermen, Jürgenschellert, & Schewe, 2022) focus on enterprises' strategic



JEL Classification — L25, L26, M21

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orientations (SOs) which guide the strategic decisions of the management teams (Gnizy *et al.*, 2014; Baker *et al.*, 2022) and describe enterprises' principles, which direct their activities and generate behaviors with the intent of achieving superior firm performance (FP) within the marketplace (Wales *et al.*, 2020).

The literature suggests that there are three overarching types of SOs, such as market orientation (MO), entrepreneurial orientation (EO) and learning orientation (LO) (Wales *et al.*, 2020; Baker *et al.*, 2022; Hyder, Sundström, & Chowdhury, 2022). Thus far, among other things, studies have examined separate individual effects of the aforementioned SOs on FP. In several cases, scholars examined the comparative strength of orientations on FP, which produced mixed results. They found that EO and MO have mostly positive associations with performance, while LO's performance effects seem to be less stable (Farrell & Oczkowski, 2002; Kropp, Lindsay, & Shoham, 2006; Laukkanen, Nagy, Hirvonen, Reijonen, & Pasanen, 2013; Deutscher, Zapkau, Schwens, Baum, & Kabst, 2016; Hernández-Linares, Kellermanns, & López-Fernández, 2018). Moreover, several studies show that LO does not directly impact FP. Scholars reported an indirect impact on performance through innovation (Calantone, Cavusgil, & Zhao, 2002; Lin, Peng, & Kao, 2008; Lam, Lee, Keng-Boon Ooi, & Lin, 2011). To conclude, past studies have attempted to explore the roles that LO plays – either directly or indirectly through an intermediary variable – in explaining FP.

Although the research has provided many insights, this does not suggest that future research should avoid focusing specifically on the effects of EO, MO or LO in isolation. This is because when examining such SOs as EO, MO or LO in isolation, comparisons may help increase confidence in the strength of study findings (Wales *et al.*, 2020). At the same time, beliefs, values and external environmental factors at the enterprise level may differ significantly in other institutional settings (Baker *et al.*, 2022).

Therefore, studies exploring SOs can also examine the role of various aspects of the external environment, including market dynamism (MD), to better explain when individual SOs improve FP (Wales *et al.*, 2020; Baker *et al.*, 2022). This indicates that the replications and extensions of past studies should also aim to examine the indirect impact of LO on FP through the moderating variable(s).

Therefore, the above-defined inquiry directions constitute the basis for a better insight into the (in)direct relationship between LO and FP, in which MD acts as a moderator. A better understanding of the organizational factors that guide enterprises' approach to the pursuit of competitive advantage is essential, because markets exist in a constant state of disequilibrium (Baker *et al.*, 2022).

The need to ground and develop theories is particularly relevant to micro, small and medium-sized enterprises (MSMEs) which are less able to absorb the financial impact of failed ideas than large enterprises and therefore must choose their initiatives carefully (Gnizy *et al.*, 2014). They need to establish a position in the market, often with limited resources and scope of competence (i.e. a technological one); owners' influence on the decisions; reliant on a small number of customers and suppliers, or focus on current operations' efficiency (Keskin, 2006). However, according to the approach that organizations adapt as fast as they learn (Hernández-Linares *et al.*, 2018), MSMEs creation and use of knowledge that challenges existing assumptions and beliefs (LO) (Wales *et al.*, 2020) may be the key to maintaining a competitive advantage (Baker *et al.*, 2022).

Therefore, we posed two main research questions:

RQ1. How is LO related to FP?

RQ2. Are the links between LO and FP contingent on the degree of MD?

Understanding the role of an orientation focused on organizational learning is important for our framework, because it is a means for enterprises to transform competitor orientation into

performance (Schulze, Townsend, & Talay, 2022). Therefore, the purpose of our study is two-fold. First, we examined the relationship between LO and performance in micro, small and medium-sized enterprises (MSMEs). Second, we analyzed the moderating role of MD in the relationship between LO and MSMEs' performance. Clarifying these issues is important to treat LO as a strategic organizational factor shaping FP in different settings.

The research sample included MSMEs operating in TPs in Poland, because there is still a deficit of empirical research among tenant enterprises (Wójcik-Karpacz, Karpacz, & Rudawska, 2021).

Conceptualization of learning orientation in the literature

In the literature, scholars (i.e. Gnizy *et al.*, 2014) emphasize that LO creates a learning-oriented organizational culture and atmosphere by drawing managers' attention to organizational learning activities. Therefore, the concept of LO, considered a subjective and multifaceted learning of enterprises (i.e. Sinkula, Baker, & Noordewier, 1997; Baker & Sinkula, 1999a; Calantone *et al.*, 2002; Gnizy *et al.*, 2014; Wales *et al.*, 2020), basically includes a set of values which challenge fundamental beliefs and practices (Baker & Sinkula, 1999b) enabling enterprises "to not only accomplish within-paradigm improvements (e.g. continuous improvement), but also paradigm shifts (e.g. breakthrough innovation)" (Baker & Sinkula, 1999a; Cowden & Alhorr, 2013).

Values allow people to manage their own behavior in a world of rapid change. Therefore, according to Koźmiński (2016), "the most practical binder in the face of these extortions is shared values." Under such circumstances, enterprises refine routines and existing knowledge (i.e. adaptive learning), challenge long-held assumptions and develop new ways of thinking and new norms (i.e. generative learning) (Slater & Narver, 1995; Sinkula *et al.*, 1997; Baker & Sinkula, 1999b; Schulze *et al.*, 2022).

Accordingly, enterprises are moving from adaptive learning, which is reflected in cost and operational efficiency, to generative learning, which is reflected in radical innovation and the exploration of new markets and technologies (Keskin, 2006). Simultaneously, engaging in exploration and exploitation is crucial for the short and long-term survival of enterprises (Lendowski *et al.*, 2022).

Thus the aforementioned set of cultural values affects the quality, depth (Gnizy *et al.*, 2014), direction and intensity (Alerasoul, Afeltra, Hakala, Eliana Minelli, & Strozzi, 2022) of enterprises' organizational learning process. A shared vision within the organization and the learning intensity defined as motivation determined by commitment and open-mindedness for the creation and use of knowledge influence the direction of the "what to study" question. According to Sinkula *et al.* (1997), open-mindedness is the willingness to critically evaluate the organization's operational routine and accept new ideas, while a shared vision refers to a focus on learning across the organization. Verona (1999) emphasizes that learning among organizational members is of less importance without a shared vision. In business practice, this manifests itself in the fact that many creative ideas are never implemented due to the lack of a common direction. Great ideas fail to translate into action due to the diverse interests in the organization. Thus, a positive learning climate requires an organizational focus on the implementation of new knowledge. A clear direction of learning is likely to create organizational strength or even a core competency (Calantone *et al.*, 2002). This indicates that LO, which fosters collective/organizational learning, is an organizational-level phenomenon (Keskin, 2006). Moreover, Lam *et al.* (2011) argue that LO involves the entire organization in the creation and use of knowledge, in which information about consumer desires, market movements, competition programs and new technology developments is extracted and made available within the enterprise itself to develop better products.

Learning-oriented enterprises accumulate knowledge from experience, draw conclusions from successes and failures, or acquire knowledge from the outside (Schulze *et al.*, 2022), for example, from the market, technology, competition or the socio-economic system (Baker & Sinkula, 1999a; Calantone *et al.*, 2002; Hakala, 2011). Anyway, LO goes beyond customer/market focus.

Baker and Sinkula (1999a) emphasize that learning-oriented enterprises encourage (or even require) organizational members to think outside the box and constantly question the organizational norms that guide their organizational actions. Therefore, LO enables enterprises to unlearn obsolete conventional knowledge about markets, customers and competitors thus allowing them to avoid competency pitfalls and make decisions in a more proactive way (Baker *et al.*, 2022).

According to Nystrom and Starbuck (1984), unlearning is the process of discarding outdated mental models. Mental models become obsolete as reality changes. The failure to unlearn them reflects the acceptance of the enterprise's response to market conditions which no longer apply. If an enterprise does not have the means to identify and replace outdated beliefs and behaviors, the way it gathers market information, interprets it, and acts upon it becomes very biased over time. Ultimately, this mindset may threaten the enterprises' market position. Ironically, short-term success often delays rather than enhances the ability to unlearn because it can reinforce the organization's *status quo* (Baker & Sinkula, 2002). This indicates that in situations where enterprises have to deal with rapidly changing technologies and turbulent markets, unlearning the old ways can be as important as renewing or updating the knowledge base (Calantone *et al.*, 2002; Selnes & Sallis, 2003).

To conclude, LO means the enterprise's ability to learn, constantly question the assumptions and promote change or adaptation over time (Lam *et al.*, 2011).

Theory and research hypotheses

When explaining LO, scholars (e.g. Kropp *et al.*, 2006; Laukkanen *et al.*, 2013; Lonial & Carter, 2015; Wales *et al.*, 2020) used both the resource-based view (RBV) to emphasize LO as a rare, valuable, inimitable and idiosyncratic organizational resource which may work in harmony with EO and MO to ensure excellent FP and growth (Barney, 1991; Baker & Sinkula, 1999a; Wales *et al.*, 2020), as well as the DC-based view (DCV) to emphasize LO as a dynamic capability (DC) which motivates enterprises to monitor and improve the quality of information used to operationalize all strategic directions (Baker *et al.*, 2022).

Although RBV points to the importance of intangible assets for strong FP, it does not explain how enterprises can maintain a competitive advantage in an uncertain and ever-changing environment (Barney, 2001). The DCs framework serves to fill these gaps (Gnizy *et al.*, 2014).

The DC perspective extending RBV, conceptualizes LO as the enterprises' ability to proactively discover, reconcile and, if necessary, change market beliefs anchoring strategic and tactical decision-making (Baker & Sinkula, 1999a). According to Baker *et al.* (2022), LO was named DC, because it likely informs about the development or restructuring of tangible capabilities, especially in troubled markets. Thus, LO's ability to motivate capacity reconfiguration that reflects changing understandings of the market strongly supports the view that it is a DC (Gnizy *et al.*, 2014). However, only five (Hanvanich, Sivakumar, & Hult, 2006; Day, 2011; Gnizy *et al.*, 2014; Deutscher *et al.*, 2016; Huang & Li, 2017) of the forty-six articles analyzed by Baker *et al.* (2022) address this issue and its implications.

To sum up, LO is one of the factors of assessment and change that allows enterprises to assess what changes in their resources and capabilities are needed to remain competitive, especially in the face of a changing market environment (Wilden, Gudergan, Nielsen, & Lings, 2013). The more so when there is no LO, the efforts of entrepreneurs would not be able to achieve the iterations or development cycles necessary for new products to effectively meet market requirements (Wales *et al.*, 2020). Thus, we can perceive LO's absence as a threat that

may make it difficult for enterprises to maintain the performance level in new and changing conditions (Gnizy *et al.*, 2014).

Relationships between learning orientation and firm performance

By definition, enterprises with strong LO are more likely to engage in learning, developing a shared vision, and maintaining an open mindset (Sinkula *et al.*, 1997; Baker & Sinkula, 1999a; Wales *et al.*, 2020). Thus strong LO leads enterprises to question long-term assumptions about fundamental operating philosophies and explore mental models (e.g. assumptions about customers, and competitors) and theories-in-use (e.g. approaches to establishing and implementing a marketing strategy) which guide their decision-making (Gnizy *et al.*, 2014), and which enable them to adapt to changes and dynamics of the environment by resynthesizing their resources (Han & Zhang, 2021). Therefore, such enterprises encourage their employees to question how they operationalize their market-oriented behavior (Wales *et al.*, 2020), interpret the output data of these behaviors and integrate this information with other information (Baker & Sinkula, 1999a; Wahyono & Hutahayan, 2021).

As cognitive psychology indicates, taking each piece of information and then using that information in the workplace to develop new operational practices is essentially developing new patterns or ways of thinking and knowledge for employees. As a result, employees become more adaptable to different views, procedures and ideas, and become proactive to improve the quality of the workplace and business operations, and customer satisfaction (Keskin, 2006).

Therefore, enterprises strongly focused on learning do not only store knowledge, i.e. they are “collectors and warehouses of knowledge” (Calantone *et al.*, 2002), but also its processors, as they process information acquired internally and externally, anticipating market and environmental changes, and making necessary adjustments to drive the market and do not let the market drive them (Lam *et al.*, 2011). This shows that along with their increasing focus on learning, fresh knowledge and information is generated, from which knowledge may then serve to obtain information and as an external source (Wahyono & Hutahayan, 2021).

Several scientists (among others Calantone *et al.*, 2002; Anderson, Covin, & Slevin, 2009) claim that high LO allows enterprises to improve their ability to process information and strategic learning. Thus, feedback from customers, channels and competitors must serve to develop core competencies (Calantone *et al.*, 2002).

Gnizy *et al.* (2014) add that enterprises with high LO not only learn more, but also learn better. Therefore, we may assume that one of the most important characteristics of learning-oriented enterprises is that they anticipate environmental and market changes and make adjustments (Calantone *et al.*, 2002). Inevitably, an enterprise with such characteristics outperforms its rivals in the long run (Lam *et al.*, 2011). Hence, such attitudes, behaviors and strategies should lead to better long-term performance (Calantone *et al.*, 2002). Meanwhile, Sinkula (1994) argues that enterprises with weak LO rarely challenge the status quo of market-based beliefs until forced by a crisis force.

Other studies explain that there are barriers to learning, such as a preference for maintaining the status quo (Naldi, Nordqvist, Sjöberg, & Wiklund, 2007) or internal resistance to change in favor of current business practices (Cowden & Alhorr, 2013), because learning it requires being open to questioning routine organizational activities and beliefs and renewing or updating knowledge (Slater & Narver, 1995; Calantone *et al.*, 2002; Martinette & Obenchain-Leeson, 2012).

Because of current environmental and market challenges, we can perceive strong LO treated as a distinctive DC – which is a manifestation of organizations’ tendency to learn and adapt accordingly (Lam *et al.*, 2011) – as a key factor in achieving a competitive advantage (Slater & Narver, 1995; Baker & Sinkula, 1999a, 1999b; Calantone *et al.*, 2002; Wang, 2008; Baker *et al.*, 2022) or maximize organizational performance (Baker & Sinkula, 2002; Gnizy

et al., 2014). This suggests that enterprises with a higher level of LO tend to be more successful than those at the lower end of the scale.

While there is empirical support for the LO-FP relationship, additional analysis is necessary. Hence, regarding LO, we hypothesized:

H1. LO is positively related to FP.

Relationships between learning orientation and firm performance in the context of market dynamism

To extend this line of research, it was reasonable to investigate whether the relationship between LO and FP is conditioned by MD, which also attracts scientists' attention (Birkinshaw, Zimmermann, & Raisch, 2016; Lendowski *et al.*, 2022).

The existing research shows that the pace of changes in the enterprise's environment sets the framework for organizational decision-making as well as exploration and exploitation practices (Zakrzewska-Bielawska, 2017). Organizations must explore new markets, products, and technologies to ensure long-term survival. At the same time, striving for incremental improvements to take advantage of existing product markets is essential to maintain short-term competitiveness. Thus, dynamic environments require enterprises to adopt both exploratory and operational practices. Some studies argue that the ability to balance the use of existing competencies and the exploration of new knowledge, which is commonly known as ambidexterity, positively impacts multiple outcomes, including FP (Lendowski *et al.*, 2022).

The literature agrees that the more turbulent the environment, the more enterprises use innovation to stay ahead of the competition and achieve performance goals (Buccieri & Park, 2022). Environmental volatility and higher uncertainty in markets combined with technological progress prompt enterprises to calibrate their capabilities so that they can react quickly and flexibly. MD significantly affects business processes and relationships. Thus, enterprises responding to dynamic environments require more information from related processes (Ahmed, Bhatti, & Gölgeci, 2022).

From LO's perspective, MD is not a threat, but rather an opportunity to improve development prospects. Therefore, we may assume that enterprises do not necessarily use LO to counter MD, but rather to lead markets. We can explain this by the fact that enterprises with good LO, by learning from their environment and the capabilities that may exist, are able to provide quick solutions to various environmental challenges. In this way, LO helps such enterprises to create sustainable competitive advantages and improve their performance (Baker & Sinkula, 2009; Wales *et al.*, 2020).

According to this, the strength of the proposed relationship between LO and FP may be moderated by the degree of MD faced by enterprises. LO may be less useful for the reconfiguration of specific capabilities aiming to adapt the enterprise to changing environmental conditions (Baker *et al.*, 2022) when the factors affecting, e.g. client's needs and requirements remain static and predictable, because such a situation demands only minor adjustments. In turn, to thrive in highly unpredictable markets, enterprises rely on LO to shape reconfiguration efforts. When environments are dynamic, the chances of discrepancies are greater and LO becomes more effective (Buccieri & Park, 2022). Thus, when analyzing the relationship between LO and FP, it becomes necessary to recognize the moderating role of MD. Importantly, the moderator hinders or accentuates the strength or direction of the independent variable on the dependent variable. In brief, the moderator modifies the strength or direction of the causation (Wales *et al.*, 2020).

Considering the preceding arguments and previous research, we hypothesized:

H2. MD moderates the LO-FP relationship; the positive effect of LO on FP is likely to be stronger under high MD than under low MD.

We expected a positive moderating influence of MD on the proposed H2 relationship, because as markets become more dynamic, LO may become more relevant to achieving organizational performance. We believe that under conditions of increased MD, LO is more closely related to business success, and the relationship between LO and FP is stronger when the MD level is higher.

Methodology

Research sample, data collection and research methods

We obtained the data used to verify the hypotheses through a survey conducted among the management personnel of MSMEs (Entrepreneurs' Law, Act of 6 March 2018, Polish Journal of Law, 2021, item 162, art. 7) operating in technology parks (TPs) in Poland.

We developed the contact database of enterprises with tenant status using contact details (e-mail addresses, telephone numbers) provided on the websites of individual TPs or on the websites of these enterprises. The list included a total of 1568 enterprises.

However, it did not allow us to determine the number of enterprises in terms of their size defined by the number of employees or industry. Consequently, the survey covered all identified enterprises operating in TPs in Poland, and the metric data collected from the respondents made it possible to identify the structure of the full research sample, which in the next step made it possible to exclude both self-employment and large enterprises.

Thus, although we received 225 questionnaires with an overall response rate of 14%, the effective research sample was much smaller (182 MSMEs), because we reduced it by large enterprises (5 enterprises) and self-employment (38 enterprises). Therefore, the effective return of the questionnaires was 12%.

We excluded self-employment and large enterprises from the complete research sample to align with our research assumptions. Firstly, we used the LO measure dedicated to enterprises employing one or more employees (Gnizy *et al.*, 2014), which excluded from the research microenterprises that did not employ any employees. Secondly, the research units were MSMEs.

We conducted the empirical research using Paper and Pen Personal interview (PAPI) and Computer Assisted Telephone Interviewing (CATI) techniques. We preceded the survey by informing the directors of TPs about the conducted empirical research and asking them to disseminate this information among tenant enterprises to authenticate this research, distributed the questionnaires among tenants via internal communication systems existing in TPs (i.e. tenants' e-mail databases, internal intranet, social media groups) or personal contact of TPs employees with respondents, or sending them the survey in the form of an attachment to an e-mail message. We collected the data mainly using an electronic questionnaire to be filled in via the Internet.

The respondents in individual enterprises were managers, because they had the greatest knowledge about its activities. We instructed the respondents that the unit of analysis was to be the enterprise they manage. We limited the questionnaire to one respondent per enterprise. We conducted the research from March 2017 to December 2018.

As mentioned, the effective research sample included 182 tenant enterprises with at least one employee but no more than 249 employees. Small enterprises (employing from 10 to 49 employees) provided 37.40% of the responses. A higher percentage of responses came from microenterprises (employing from one to nine employees; 51.10%) than from medium-sized enterprises (employing from 50 to 249 employees; 11.50%).

Measures

Learning orientation. In the conceptual model illustrated in Figure 1, there are three key constructs (LO, FP, MD) that required operationalization. We translated all measures by the forward-back translation method.

We operationalized LO using a scale previously used by [Gnizy et al. \(2014\)](#) who adapted it from the scale developed by [Baker and Sinkula \(1999a\)](#). As a result of their research ([Gnizy et al., 2014](#)), we operationalized the LO scale as a construct with six components. We measured each of these items on a seven-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability analysis of the adapted LO questionnaire in the sample ([Table 1](#)) indicated a high reliability of this scale ($\alpha = 0.896$).

Firm performance. We used a well-established scale ($\alpha = 0.892$) developed by [Keh, Nguyen, and Ng \(2007\)](#) to operationalize FP. Values obtained using Cronbach's alpha values ($\alpha = 0.901$) showed very good reliability of this variable. The reliability of the used questionnaire was similar to that given by its authors and the sample selection did not reduce its reliability level. The questions addressed to the respondents concerned the assessment of profitability, sales revenue, and market share in relation to their main competitor(s). We measured all items using the seven-point Likert scale (from 1 – much weaker to 7 – much better).

All FP measures were subjective, i.e. consistent with the respondent's perception. Research by [Khan, Xuehe, Atlas, and Khan \(2019\)](#) mentions that using subjective measures is a significant alternative when objective measures are not obtainable.

Furthermore, given that all elements of the measurement relate to the organization's main competitor(s), we may also interpret them as reflecting the enterprise's relative advantage ([Baker & Sinkula, 1999a](#)).

Market dynamism. Scholars study MD as a moderator regarding the impact of LO on FP. We used a well-established scale to operationalize MD. For this purpose, we used a six-item scale ($\alpha = 0.730$) created by [Wang, Senaratne, and Rafiq \(2015\)](#) who adapted it from the scale developed by [Atuahene-Gima \(2005\)](#) and adapted from [Jaworski and Kohli \(1993\)](#). The MD scale measured changes in technology, competition and customers ([Jaworski & Kohli, 1993](#); [Atuahene-Gima, 2005](#); [Wang et al., 2015](#)). In our empirical studies, the values obtained by means of Cronbach's alpha values ($\alpha = 0.856$) showed very good reliability of this questionnaire. The selection of the sample did not reduce its reliability level.

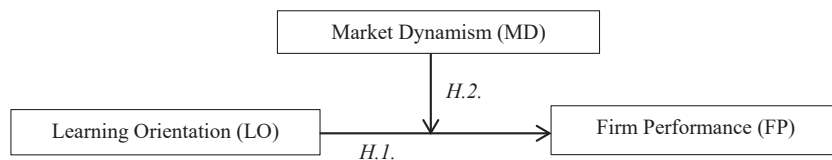
Description of analytical procedure

The conceptual model presented in [Figure 1](#) set the research direction and the method of conducting quantitative empirical research. The implementation of the research objective and the related verification of the research hypotheses required statistical analysis.

For the analysis of empirical data, we used the methods of description and statistical inference. We started the analytical procedure with the assessment of the reliability of individual scales (Cronbach's alpha test).

In this case, we tested the reliability of scales to verify whether the reliability of the questionnaire in the analyzed sample was similar to that provided by its authors and whether the sample selection did not affect the questionnaire's reliability level. We analyzed three theoretical constructs (LO, FP, MD) for reliability.

In the next step, we applied the correlation analysis between the variables by using the rho-Spearman coefficient ([Table 2](#)). This coefficient measures the linear relationship between the variables and is more preferable to measure relationships for ordinal scales, i.e. such as those in this study. The results of the Kolmogorov-Smirnov tests confirmed these



Source(s): Own elaboration

Figure 1.
The research model
and hypothesis

Table 1.
Constructs, construct
measuring elements,
results of the
Kolmogorow–Smirnov
tests and Cronbach's
alpha coefficients

Constructs and their components	Normality tests Kolmogorov-Smirnov ^a			Reliability tests of measures and items ^b
	Statistics	df	Significance	Cronbach's alpha coefficient
<i>Construct: learning orientation</i>	0.094	182	0.000	0.896
Our basic values include learning as a key to improvement	0.191	182	0.000	0.871 ^c
The collective wisdom in this enterprise is that once we quit learning, we endanger our future	0.175	182	0.000	0.871 ^c
There is a well-expressed vision of who we are and where we are going as an enterprise	0.181	182	0.000	0.872 ^c
There is little agreement on our business vision across all levels, functions and divisions	0.238	182	0.000	0.882 ^c
Management does not want their “view of the world” questioned	0.217	182	0.000	0.884 ^c
We place a high value on open-mindedness	0.191	182	0.000	0.871 ^c
<i>Construct: market dynamism</i>	0.084	182	0.003	0.856
<i>Speed of change in technology and competition</i>	0.133	182	0.000	0.719
The actions of local and foreign competitors in our major markets were changing quite rapidly	0.163	182	0.000	0.874 ^c
Technological changes in our industry were rapid	0.140	182	0.00	0.872 ^c
<i>Unpredictability of change in technology and competition</i>	0.117	182	0.000	0.831
Technological changes in our industry were unpredictable	0.164	182	0.000	0.876 ^c
The market competitive conditions were highly unpredictable	0.145	182	0.000	0.876 ^c
<i>Uncertainty of customer behavior</i>	0.113	182	0.000	0.787
Customers’ product preferences changed quite rapidly	0.147	182	0.000	0.876 ^c
Changes in customers’ needs were quite unpredictable	0.164	182	0.000	0.876 ^c
<i>Construct: firm performance</i>	0.144	182	0.000	0.901
profitability	0.186	182	0.000	0.872 ^c
sales revenue	0.184	182	0.000	0.871 ^c
market share	0.180	182	0.000	0.871 ^c
Note(s): ^a including Lilliefors significance correction				
^b Cronbach's alpha coefficients presented in Table 1 refer to the reliability of scales in the research sample				
^c Cronbach's alpha coefficient after removal of items				
Source(s): Own elaboration				

assumptions as they indicated grounds for assuming that the variables were not normally distributed ([Table 1](#)). [Table 1](#) presents the results of the Kolmogorov–Smirnov tests and Cronbach's alpha coefficients.

We used linear regression models to test the hypotheses, which allowed for a global assessment of relationships among all analyzed variables. We used this technique to explain the relationships among the analyzed variables.

Analysis and results

Correlations among variables

First, we analyzed correlations among the variables appearing in the research model. We prepared a table for the correlation of variables using Spearman's rank-order correlation

	Learning orientation	Market dynamism	Speed of change in technology and competition	Unpredictability of change in technology and competition	Uncertainty of customer behavior	Firm performance
Learning orientation	1.000	0.151*	0.236**	0.048	0.124	0.197**
Market dynamism	0.151*	1.000	0.769**	0.873**	0.811**	0.016
Speed of change in technology and competition	0.236**	0.769**	1.000	0.525**	0.430**	0.181*
Unpredictability of change in technology and competition	0.048	0.873**	0.525**	1.000	0.623**	-0.046
Uncertainty of customer behavior	0.124	0.811**	0.430**	0.623**	1.000	0.073
Firm performance	0.197**	0.016	0.181*	-0.046	0.073	1.000
Note(s): * $p < 0.05$; ** $p < 0.01$; rs – Spearman's rank-order correlation coefficient						
Source(s): Own elaboration						

Table 2.
Correlations among the
analyzed variables

coefficient. We assumed that we would analyze only statistically significant relationships. Table 2 presents the results of correlations among the analyzed variables.

The analysis of data included in Table 2 indicated weak or very weak correlations among the variables in individual configurations. LO positively correlated with FP ($r_s = 0.197$; $p < 0.01$). This means that on average, the increase in LO occurred along with a small increase in FP.

We also noticed a positive but very weak ($r_s = 0.151$) correlation between MD and LO, which was statistically significant ($p < 0.05$). This means that on average, the increase in MD occurred along with a slight increase in LO.

Simultaneously, the results of the correlation analysis indicated a weak but positive correlation between one of the dimensions of MD, i.e. the speed of change in technology and competition, and LO ($r_s = 0.0.236$; $p < 0.01$). Relationships between the two remaining dimensions of MD were not statistically significant.

Moreover, the aforementioned MD dimension is also positively correlated with FP. The correlation between the MD dimension called speed of change in technology and competition and FP was positive, weak and statistically significant ($r_s = 0.181$; $p < 0.05$). This means that the increase in the speed of change in technology and competition was accompanied by, on average, a slight increase in FP. Relationships between the two remaining dimensions of MD and FP were not statistically significant.

Correlation analysis encourages deeper recognition and understanding of the LO-FP relationship in the context of MD.

The results of verification of research hypothesis

We used linear regression models to verify H1 and H2. The values of coefficients obtained for permanent effects in this model inform how much the expected value of the explanatory variable changes along with the unitary growth of a given predictor. The explanatory variable (predictor) is a variable in a statistical model (as well as in an econometric model) that serves as the basis for calculating the response variable. In Model 1, there was one explanatory variable (LO); while in Model 2, there were two explanatory variables (LO, MD). The response variable was FP. We verified the statistical significance of these coefficients using a test based on the t statistics. For all the mentioned tests, $p < 0.05$ indicated the statistical significance of the analyzed relationships.

The assessment of the impact of LO on FP was dictated by the verification of H1. Meanwhile, the assessment of the dynamism's impact on the market in which enterprises operate in explaining the impact of LO on FP was dictated by the verification of H2.

Table 3 presents the results of testing the H1 and H2 hypotheses.

We estimated Models 1 and 2 in Table 3 by using the Akaike Information Criteria (AIC). The AIC for both models was similar, i.e. 568.28 for the first model and 571.12 for the second one. The AIC levels for both models indicated acceptable matching levels. The lower the AIC value, the better the predictive values of the model (Burnham & Anderson, 2004).

The model coefficient is a parameter determined by its most likely value. The confidence interval of the model coefficient indicates within which less likely but still possible values can fall. It also has a diagnostic value. If the value of the regression coefficient contains "0," the coefficient has no substantive value for the model.

Model 1 explained 13.5% of the data variation ($R_2 = 0.135$), while Model 2 explained 14.0% of the data variation ($R_2 = 0.140$), which is slightly more than Model 1. The analysis of the models presented in Table 3 leads to several findings.

In the first model, only LO related positively to FP and it only slightly explained the variability of the dependent variable. It had a small but statistically significant impact on FP (coefficient: 0.38; $p = 0.00$). The linear regression model (Model 1) confirmed the thesis about

Table 3.
Regression models

				Model 1 Adjustment measurements	Model 2 Adjustment measurements	
Akaike Information Criteria (AIC)				AIC = 568.28	AIC = 571.12	
Degree of dependent variable explanation (Firm Performance) (R ²)				R ² = 0.135	R ² = 0.140	
Model's parameters (dependent variable – Firm Performance)						
Predictor	Coefficient	Range of confidence	p-value	Coefficient	Range of confidence	p-value
Absolute term	Mar.22	2.12–4.33	0.00	Apr.57	1.06–8.09	<0.01
Small enterprises (from 10 to 49 employees)	0.27	–0.09–0.64	0.14	0.27	–0.1–0.63	0.15
Medium enterprises (from 50 to 249 employees)	0.55	–0.01–1.11	0.06	0.53	–0.04–1.1	0.07
Learning orientation (LO)	0.38	0.14–0.61	0.00	0.02	–0.79–0.83	0.96
Market Dynamism (MD)	–	–	–	–0.34	–1.24–0.56	0.45
<i>Moderation effects (moderator: Market Dynamism)</i>						
LO:MD*	–	–	–	0.09	–0.12–0.3	0.39
Note(s): *colon sign between LO and MD means the interaction between the factors (learning orientation, market dynamism) included in the H2 hypothesis						
Source(s): Own elaboration						

the positive impact of LO on FP. We may assume that an increase in the assessment of LO by one point – with no change in the other parameters of the model – would result in an increase in average FP by 0.38. This model explained 13.5% of the data variability ($R^2 = 0.135$).

Second, the linear regression model (Model 2) did not confirm the thesis about the moderating role of MD on the LO-FP relationship. None of the predictors showed statistical significance ($p < 0.05$) in Model 2. Moreover, taking the MD variable into account affected the model's quality and MD adopted negative prediction indicators, which means that better FP in responding to changes in the level of MD deteriorates the overall FP. However, the research did not confirm whether MD – a higher-order construct built of three first-order constructs, i.e. the speed of changes in technology and competition, the unpredictability of changes in technology and competition, the uncertainty of customer behavior – increases the importance of LO for increasing FP, and thus achieving a competitive advantage.

Third, the control variables were insignificant in both models. This means that the control variables in the form of enterprise size did not have a statistically significant effect on the dependent variable. Therefore, the introduction of two control variables and a moderating variable reduced the impact of LO on FP to a statistically insignificant level.

Discussion and conclusions

This study represents an effort to empirically develop knowledge about the (in)direct relationship between LO and FP, in which MD acts as a moderator and contributes to strategic management literature.

Based on the statistical results, we argue that LO is a predictor of FP. We proved a statistically significant but minor role of LO in shaping FP, but only in those MSMEs operating in TPs, which were included in the research sample. However, the variability in the

range of LO explained only 13.5% of the variability in the subjective assessment of performance achieved by a given enterprise.

In other words, we found that the direct effect of LO on FP was positive for the aforementioned MSMEs, confirming that higher LO levels are usually associated with better FP. This suggests that raising the LO level in MSMEs is conducive to achieving better performance than their main competitor(s), including profitability, sales revenue and market share, because we used such measures to assess the performance of enterprises included in the research sample. Noteworthy, the desired trend of changes in the values of these measures is an upward trend.

Various empirical findings presented in the literature show that investing in a high level of LO directly and positively contributes to FP (e.g. [Baker & Sinkula, 1999b](#); [Baker & Sinkula, 2002](#); [Lee & Tsai, 2005](#); [Kropp et al., 2006](#); [Gnizy et al., 2014](#); [Alerasoul et al., 2022](#)). By contrast, other scholars (e.g. [Lin et al., 2008](#); [Lam et al., 2011](#)) suggest that there is no significant relationship between the two constructs. [Lam et al. \(2011\)](#) argues that LO does not show any significant correlation with firm market performance, suggesting that LO does not provide a broad opportunity for a service organization to achieve higher market performance.

Moreover, when the above-mentioned performance categories of a specific enterprise are higher than those achieved by its competitor(s), we can treat LO as an organizational factor in achieving and maintaining a competitive advantage.

Therefore, our findings also suggest that contemporary organizations require strong LO to gain competitive advantages. Findings by [Calantone et al. \(2002\)](#) and [Slater and Narver \(1995\)](#) supported this argument as they indicated that enterprises with strong LOs are indeed able to achieve a competitive advantage. Based on the DCV, we can explain this by the fact that strong LO uses organizational capabilities to achieve a competitive advantage ([Baker et al., 2022](#)).

Moreover, [Baker et al. \(2022\)](#) argue that SOs are organizational priorities that guide enterprises' approach to pursuing competitive advantage priorities. It turned out to be true also in our empirical findings but with regard to LO, which is one of the superior types of SOs.

We also tried to determine if there was a moderator in the mentioned relationship. However, the verification of the [H2](#) hypothesis did not provide an answer regarding how LO explains FP when a moderator like MD is involved.

The linear regression model 2 ([Table 3](#)) indicated that the introduction of MD as a moderator negatively affects this model, making the previously significant predictor (LO) (Model 1; coefficient: 0.38; $p = 0.00$) lose statistical significance in explaining FP (Model 2; coefficient: 0.09; $p = 0.39$). Hence, we did not find any significant impact of the moderating variable, MD, on the relationship between LO and FP.

Research limitations and suggestions for future research

Several limitations exist in the current study and these limitations give rise to some directions for forthcoming study.

First, we were not able to collect data from a random sample of MSMEs operating in TPs in Poland, because this process depends on enterprises' willingness to participate in the research. This limitation bounds the degree of generalizability. One interesting follow-up study would involve collecting data from a random sample of enterprises.

Second, we took the research sample from different industries. A homogeneous sample could provide a deeper insight into the relationship between LO, MD and FP. In this spirit, future research may focus on specific industries in SMEs, such as manufacturing, trade or services.

Third, we only considered the role of LO. The study on LO without MO or EO presents a limited but focused perspective, which is consequently mainly related to enterprises' ability to promote change and adaptation ([Hernández-Linares et al., 2018](#)), without either considering

how good the enterprise is at marketing or exploration or bold and pioneering innovation efforts. Thus, future researchers may consider other types of SOs to further explain the impact of multiple SOs on FP.

We hope that this research will inspire future investigations that examine and compare firm SOs.

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Corresponding author

Jarosław Karpacz can be contacted at: jaroslaw.karpacz@ujk.edu.pl

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