

Strategic-hybrid orientations and perceived business performance in medium/high-tech SMEs

Perceived
business
performance

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Abstract

Purpose – This paper aims to investigate the direct and combined impacts of entrepreneurial orientation (EO) and conservative orientation (CO) on perceived business performance (PBP) of small- and medium-sized enterprises (SMEs) under strategic-hybrid orientation (SHO) theory.

Design/methodology/approach – The data collected from the SABI NEO international database has 90 companies in 13 medium-to-high and high-tech activity sectors. The authors used partial least squares structural equation modelling to test the research model.

Findings – Business strategies match a SHO that includes both orientations, i.e. EO and CO. Moreover, as expected, the authors found evidence that each orientation produces performance-related sign-opposite significant impacts. Finally, the hypothesis regarding the positive synergistic effect of both orientations (EO and CO) on PBP was also supported.

Research limitations/implications – One stems from the study's cross-sectional nature, requiring a longitudinal approach. Another one resides in the absence of further examinations concerning multigroup analysis. Another restraint is the limitedness of data, focused on firms with med/high-tech intensity. For last, while the use of results in the initial stages of theory development can be beneficial, it is important to note that such results cannot be simply extrapolated or generalized to other industrial sectors without careful consideration of the contextual factors at play.

Social implications – This study humbly endeavours to contribute to the finality of SMEs' more steady and prosperous existence concerning the consciousness of the need to improve labour stability and wage fairness, conditions such as requiring a continuous commitment.

Originality/value – In this study, the authors aimed to investigate the impact of SHO on SMEs' PBP. To this end, the authors simultaneously used two different strategic orientations (SOs): EO, which is widely studied in the literature, and CO, which has been less researched. The authors also examined their synergistic effects on PBP. The authors' approach is based on Venkatraman's strategic orientation of business enterprises model and the comparative paradigm of SOs.

Keywords Conservative orientation, Entrepreneurial orientation, Strategic-hybrid orientation, Perceived business performance, Strategic orientation, Strategic orientation of business enterprises (STROBE), Partial least squares structural equation modelling (PLS-SEM)

Paper type Research paper

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1. Introduction

Innovation, creativity and fast process adaptation are attributes the extant literature recognises as entrepreneurship characterising and the leading firms' arguments for dealing with unpredictable, discontinuous, hypercompetitive markets (Day and Schoemaker, 2016; Sarooghi *et al.*, 2015). However, the small- and medium-sized enterprises' (SMEs') fulfilment of these arguments has become challenging (Prasanna *et al.*, 2019). When intending strategies to achieve entrepreneurial character, SMEs deal with distinct strategic choices in a way dissimilar to large firms (Kumar *et al.*, 2012). SMEs cope with dilemmas of their own, e.g. resource scarcity, financial shortage or lack of benefit from scale economics due to size insufficiency. Whenever activity is capital-intensive, such as in the medium-high tech industries, most proactive SMEs balance their entrepreneurship's differentiation/innovation outcomes with needing internal gains on flexibility and market readiness improvements, all by thorough cost management. Specialised literature designates "hybrid strategy" (Birkinshaw and Gibson, 2004; Cao *et al.*, 2009; Raisch *et al.*, 2009) or strategic-hybrid orientation (SHO) as a way of balancing entrepreneurship with another strategy of a contradictory nature, kind of similar to cost-focus (Porter, 1980). The SHO appears quite effective when maintaining any competitive advantage for as long as possible, although, conceptually, it remains pretty poorly held in SMEs' literature.

It is common knowledge that today's market environments are mostly fast-changing, hypercompetitive, discontinuous and volatile (Kleber and Volkova, 2017). To cope successfully with such deterministic environments (Donaldson, 2001), the strategic management literature stresses that firms must fit into their surroundings by becoming effective, efficient, flexible and focused (Smith and Tushman, 2005). However, despite living in similar environmental coercivity, firms attain different performances from encompassing distinct action steps (Dess and Davis, 1984), i.e. distinct content options about strategies' conceiving and deployment. Various designations qualify those options: strategic fit, strategic choice or, more commonly, strategic orientations (SOs) (Manu and Sriram, 1996). Of the three methodological approaches SO offers (Hakala, 2011; Ho, 2014), the comparative method is literature-recognised to be the one most qualified for measuring firms' business strategy (Murray, 2012; Speed, 1993). By embedding the SOs' comparative method, Venkatraman's (1989a) "strategic orientation of business enterprises" (STROBE) model is a multi-dimensional construct that allows disaggregating a firm's variations felt through several dimensions, recognised as essential for strategic characterisation. One of the SHO theory's key holdings this study encloses is considering the STROBE model's dimensions concerning two critical higher-order concepts in modern-day SMEs: "entrepreneurial orientation" (EO) and "conservative orientation" (CO). The paper provides theoretical explanations and reasoning to support the notion of what some research literature applying the STROBE model for SO measuring has previously suggested - the need to distribute all STROBE dimensions according to two higher-order SOs (e.g. Gupta and Basu, 2014), soever not identifying which orientations nor theory.

Scholarly research has mainly used the EO's approach (e.g. Covin and Slevin, 1991) as the pivotal framework for explaining firms' outperformance (Anderson *et al.*, 2014) when operating within such an environment. In that vein, our approach to SME strategy relies on the entrepreneurship SO (Covin *et al.*, 2006; Lumpkin and Dess, 1996). Furthermore, our perspective also ingrains another SO all SMEs deal with, the CO (Byrd *et al.*, 2006; Eggers *et al.*, 2013; Lukas *et al.*, 2001). This orientation (Lukas *et al.*, 2001; Venkatraman, 1989b) has not received proper attention compared to the one given to EO. However, a more proper causal explanation for steady upper performance will require complementary insight aside from EO, such as that one the CO may offer while independent variable, this sight coinciding

with the SO concept. Under SO's perspective, not integrating this conservative stance will be like considering any entrepreneurial firm in a permanent creative euphoria, with the entrepreneurship an insulated explanation for the performance, which impoverishes the explanatory ability of models due to the incompleteness of examining causal mechanisms (Olson *et al.*, 2005). Most strategic management scholars' view about CO stays research-scrutinised under two main theoretical approaches, one linked to typologies such as Mintzberg's "adaptive" organisation (Mintzberg, 1973) or Miles's "defender" firms (Miles and Snow, 1978). The other view relies on Covin's entrepreneurial literature (Covin, 1991; Covin and Slevin, 1989), which places this strategy concept under a continuum ranging from conservative to entrepreneurial position, i.e. CO matches the opposite of entrepreneurial posture. However, any of these CO views are primarily associated with high rivalry markets, occasionally stagnant or uncertain, where firms tend to compete on price by cost-lowering to defend their market share, a classic notion of CO. More recent research (e.g. Helfat *et al.*, 2007; Martin and Javalgi, 2016) consider CO an adaptive stance by dealing with the rise of flexibility in the value-generation processes. Other scholars relate it to improving response readiness at core-critical operations (Wilden *et al.*, 2013). Finally, it is also linked to moderating any further advancements on risky ventures of highly uncertain return (Wiklund and Shepherd, 2005). Notwithstanding, to date and the extent of our knowledge, SME research has yet to consider both orientations' coexistence as built from all dimensions of the STROBE model, a gap we intend to fill with this study.

The SHO concept we developed supports the model conception, which we found familiar among medium- to high-tech SMEs. Although we consider previous works concerning the SHO (e.g. Anees-Ur-Rehman *et al.*, 2017), the concept developed mainly relies on the strategic management literature related to the hybrid perspective and the SO theory. The "hybridity" of firms is literature-explained throughout two main theoretical flows. One is the resource-based ambidexterity paradigm (Birkinshaw *et al.*, 2016; Cao *et al.*, 2009); the other is the hybrid strategy paradigm (Pertusa-Ortega *et al.*, 2009; Spanos *et al.*, 2004; Sumer and Bayraktar, 2012). Under the business management view, the second literature stream is SHO (Anees-Ur-Rehman *et al.*, 2017). It must enclose two contradicting but cardinal business strategies, e.g. EO and CO; it considers that performance may be steadier and more strengthened from their synergistic effects, a conclusion confirmed by more recent studies (Alnoor *et al.*, 2022).

Concomitantly, developing EO and CO, as we did, relates to a configurational perspective whose dimensions rest on the STROBE model. We collapsed Venkatraman's strands into two opposite, independent constructs for detecting and assessing SHO: EO entails the concept of entrepreneurship (Shane and Venkataraman, 2000); CO comprises adaptiveness throughout flexibility and processes' market-readiness and risk-excessiveness avoidance (Miller and Friesen, 1978; Morgan and Strong, 2003).

To summarise, we noted several literature insufficiencies conducive to raising research questions. Research questions rely on the following facts: the SMEs' SHO research scarcity, the lack of SME studies analysing both the EO and CO strands and the COs' low attention given by literature on SMEs. The first question addresses how EO and CO may causally impact performance while independent constructs composing SHO:

Q1. What effects do EO and CO have on the performance of high-to-medium tech SMEs?

When both orientations exist simultaneously, the synergistic effect concerns combining them to measure their resulting causality on firms' performance. It has roots in the contingency theory (Donaldson and Joffe, 2014) by dealing with fit by moderation (Chan and

Huff, 1993). The “fit by moderation” concept has been long established by Venkatraman (1989a), among others, and according to Chan and Huff (1993), it encloses fit (meaning alignment) and moderation (meaning interaction). By “fit by moderation”, the theory explains as being the relationship between the dependent variable (PBP) and an independent one (EO) that comes contingent upon the moderating effect of a third one (CO) onto the said relationship. Therefore, once the second variable (CO) is aligned (or fitted) with the independent one (EO), the resulting interaction effect can increase the dependent variable’s (PBP) predictive power (R^2) and so its value. The importance of measuring synergistic effects from the presence of both orientations (EO and CO) must be emphasised, as it is the proper way to detect and assess extensively any SHO. This approach allows a deeper understanding of SHO by including the synergistic effects of two opposing SOs (He and Wong, 2004; Henderson and Clark, 1990), EO and CO. Then, the question is, “What is the synergistic effect of the two orientations’ interaction on performance?”.

Finally, we include a few of the study’s most relevant achievements, adequately reported in the sixth chapter of this paper. One of the foremost findings relates to the impacts on PBP accruing individually from positive EO effect and negative CO effect, both essential for that jointly may generate a final positive synergistic effect to cause PBP boosting. Further, we overcome the STROBE’s difficulty with two problematic components – aggressiveness and riskiness – giving birth to a new way for the said model’s appliance. Several other findings reinforce the theoretical completeness of the study, such as the model’s full out-of-sample predictive power or performance gains as of entrepreneurial behaviour when the CO is EO’s aligned with (i.e. fit by moderation). Finally, it must be emphasised that SMEs’ CO comes viewed in a specific and dissimilar way from the usual conservative way large firms interpret it.

The study proceeds as follows. Section 2 provides a theoretical background and describes the research model. Section 3 relates to the hypotheses to test. Section 4 explains the research method, and Section 5 provides the results. Section 6 discusses the results, and Section 7 ends with study limitations and future research streams.

2. Theoretical background

The study’s purpose regards how SHO may impact the firms’ performance. The concept of “hybridity” has been of growing interest to the academy for quite a while. That partly happens because the research on firms’ characterisation throughout one generic strategy (Porter, 1980), typology (Miles and Snow, 1978) or intended behaviour (Covin and Slevin, 1989; Kohli and Jaworski, 1990; Lumpkin and Dess, 1996; Narver and Slater, 1990) became increasingly drained when searching firms’ performance causations based on a single starting strategic assumption. According to what the comparative advantage theory (Hunt and Morgan, 1995) long proclaims, it becomes apparent that there are growing firms’ difficulties in sustaining competitive advantages, becoming increasingly prone to transience. That leads proactive organisations to new organisational forms instilled by dissimilar strategic conceptions, such as the “hybrid” organisational framings (Battilana and Lee, 2014; Bauwens *et al.*, 2020). From “hybridity” pour two significant concepts and research flows. The former, named “ambidexterity” (Birkinshaw *et al.*, 2016; Birkinshaw and Gibson, 2004), is theoretically well grounded by the resource-based theory (Barney, 2001; Peteraf, 1993; Wernerfelt, 1984). It regards the strategic management of bundles of organisational capabilities and resources (Luo *et al.*, 2017) whose uniqueness/rareness and scarcity characteristics, and the seemingly concurrent way exploring and exploiting them in conceiving new products/processes-markets will generate causal ambiguity to competitors (Barney, 1991; McIver and Lengnick-Hall, 2018; Priem and Butler, 2001) besides rising

performance gains. The latter, called hybrid strategies, accrue from earlier criticisms against Porter's typologies (Datta, 2009; Hendry, 1990; Miller and Friesen, 1986b, 1986a; Sumer and Bayraktar, 2012). Literature designates them as hybrid, mixed, integrated or combination strategies (Acquaah and Yasai-Ardekani, 2008; Kim *et al.*, 2004; Leitner and Güldenber, 2009; Miller and Dess, 1993). Some studies remark that firms pursuing a differentiation strategy may also be able to combine it with a low-cost position through an increase in value-generating processes' efficiencies (Acquaah and Yasai-Ardekani, 2008) or by processes' agility and flexibility gains (Leitner and Güldenber, 2009). Those latter structural attributes become critical for SMEs once they do not dispose of scale economics efficiencies. Therefore, the "hybrid strategies" have compelling theoretical fundamentals long enough established to be considered – what we did.

This paper proposes to extend SO's well-established theory by permeating it with the concept of hybrid strategies, which broadens its application scope and makes it more suitable for SMEs. To achieve this, we found it most adequate to consider two opposing orientations critical in SME strategic management: the entrepreneurial and conservative orientations, i.e. EO and CO. Once EO is one of the most studied orientations, evidenced by a growing pile of studies, CO is one of the least used in studies related to realistic, stable SOs successful SMEs may hold. As it is viewed now, CO packs internal adaptive stances to the external environment (Helfat *et al.*, 2007), flexibility in value-generation processes (Martin and Javalgi, 2016) and response readiness at core-critical operations (Wilden *et al.*, 2013), while also avoiding further advancements on risky ventures of highly uncertain return (Wiklund and Shepherd, 2005). Of the SO paradigms, the comparative one (Venkatraman, 1989a), which the STROBE model relies on, allows our study to capture strategic outcomes from both EO and CO.

This chapter proceeds with the theory review for the model's constructs and the theoretical reasoning supporting the relations' hypotheses with PBP, including the theoretical explanandum and hypothesis on PBP causation from the synergistic effects.

2.1 Strategic-hybrid orientation

SHO is literature-interpreted as resulting from more proactive or conservative but simultaneous behaviours (Francis and Collins-Dodd, 2000). A few research found the two orientations to be sufficiently distinct, suggesting they were separate constructs (Francis and Collins-Dodd, 2000). Either way, by accepting both orientations as a continuum or as different behaviours, one infers a firm can use either or exhibit both orientations concurrently. For example, Miller and Friesen (1982) consider a conservative innovation model accruing from the EO at strategically more conservative firms. Others (e.g. Wales, 2016) consider that some firms swing between higher and lower EO periods, the latter related to occasions where they benefit from emphasising CO. Some studies highlight EO being not homogeneous throughout the entire firm once a more CO may turn advantageous for specific organisational areas (Wales, Monsen, *et al.*, 2011). Hence, whatever the approach, literature recognises such orientations combining as those of SHO, also referred to as integrated strategy (Acquaah, 2007; Spanos *et al.*, 2004) or combination strategy (Leitner and Güldenber, 2009). According to Miller (1987), SHO's theory underlines positive relationships with profitability, but only a few empirical studies approach the topic (Claver-Cortés *et al.*, 2012; Pertusa-Ortega *et al.*, 2009; Spanos *et al.*, 2004). Further, any SME studies enclosing such orientations' synergistic effects are, to date, unknown. By considering the dimensions' coverage of the STROBE model, we will analyse its ability to capture both orientations – EO and CO – and so, under the SHO's perspective, to analyse their hypothesised individual and synergistic effects on performance.

2.2 *Strategic orientation of business enterprises model approach*

The STROBE model (Venkatraman, 1989a) measures firms' strategy through six dimensions one finds in any organisation (Morgan and Strong, 2003), described next as to their original interpretations. "Analysis" refers to the ability of organisational learning when, under a problem-solving posture (Morgan and Strong, 2003), one finds the best possible solution (Miller and Friesen, 1978) backed by management techniques and control systems (Talke, 2007). "Defensiveness" concerns a firm's emphasis on efficiency-seeking to improve operational strategies' outcomes (Miller, 1989; Venkatraman, 1989a), product/systems' quality improvements and value-creation management techniques (Venkatraman, 1989a). "Futurity" relates to firms' interest in anticipating competitive conditions and positioning accordingly (James, 2008), emphasising effectiveness rather than efficiency considerations (Grant and King, 1982; Venkatraman, 1989a). "Proactiveness" is central to a firm's innovative behaviour (Akman and Yilmaz, 2008; Miles and Snow, 1978) and is considered an enabler for competitive advantage in pursuing new products/markets. "Aggressiveness" relates to resource allocation for market positions' improvement faster than competitors, strongly linked to sales and market orientation (Miles, 1982; Miller and Friesen, 1984). Finally, "Riskiness" involves resource allocation to high-risk ventures (Miller and Friesen, 1978; Venkatraman, 1989a).

Despite its potential, research-critical issues emerged with mixed results for aggressiveness and riskiness. Such snags left out these traits in subsequent research, opening the path for another conceptualisation of business strategy measure – the EO – a concept that elapsed from the works of Covin and Slevin (1991) and Lumpkin and Dess (1996). Among other facets, EO concerns innovation and experimentalism (Teece, 2007), growth (Sexton, 1997) and exploration (Shane and Venkataraman, 2000). However, when looking at each of the measure instruments' descriptives, we find considerable commonalities with Venkatraman's operationalisation in both authors' approaches to EO, which happens due to all those concepts having roots in the same previous seminal works (Cooper *et al.*, 1986; Miles and Snow, 1978; D. Miller, 1987; Miller and Friesen, 1978; Mintzberg, 1978; Mintzberg *et al.*, 1976). Given that, one must reckon Venkatraman's model discloses a similar ability for EO assessment.

To enrich our argument in favour of the STROBE model's ability for EO and CO assessment, a few research (e.g. Lukas *et al.*, 2001), supported in previous studies measuring SO (Conant *et al.*, 1990; Dess and Davis, 1984) contends that such model becomes better characterised through two principal orientations standing out repeatedly in strategic conceptualisations: a prospective orientation and a protective orientation. Following Lukas and colleagues' discussion of two main orientations, we also analysed the traits literature to find the best dimension combination for the two principal orientations that better adjust to SMEs.

2.2.1 Strategic orientation of business enterprises' entrepreneurial orientation. The EO's compounds. We analysed the remaining dimensions – analysis, defensiveness, futurity and proactiveness – based on the EO concept descriptive premises (Covin and Slevin, 1991; Lumpkin and Dess, 1996; Miller, 1987; Shane and Venkataraman, 2000). Based on the literature's sum-up of the main theoretical and research insights on entrepreneurship (Basso *et al.*, 2009), we argue that while these four dimensions may entail complementary views of the concept in different proportions, they may provide a practical approach to EO. According to some literature (Covin and Slevin, 1989; Miller, 1983; Miller and Friesen, 1982), "entrepreneurship" is a multidimensional concept encompassing the firm's actions related to product-market and technological innovation, risk-taking and proactiveness. Looking back at STROBE's dimensions definitions, entrepreneurship mostly overlaps proactiveness

(innovative behaviour, new products/markets pursuance) and futurity (boost effectiveness on competitive conditions to overcome competitors). By turn, Basso and colleagues' review (2009) underlines the Lumpkin and Dess (1996) concept's reframing, by which EO's premises are extended to the processes, practices and decision-making activities. Given these EO's last more encompassing assumptions, we find their matching on defensiveness (methods to improve operational strategies' effectiveness) and analysis (internal organisation learning and endeavouring the best problem solution).

After careful review, it is evident that the EO concept has evolved to encompass a broader scope. Rather than solely relying on new product offerings or alternative entry points, EO's principles now extend to internal processes, strategic management, technological innovation and fostering creativity and growth. As such, we firmly believe that the four STROBE dimensions provide ample framework for defining and measuring EO.

2.2.2 Strategic orientation of business enterprises' conservative orientation. Past research (Gupta and Basu, 2014; Morgan and Strong, 2003; Venkatraman, 1989a) found mixed results for "aggressiveness" and "riskiness" traits, while the other dimensions were validated. Some works define "aggressiveness" as rivalry between firms (Clark and Montgomery, 1996), connoting it with sales orientation (Lumpkin and Dess, 1996) as a way for sales growth and profitability increase (Covin and Slevin, 1991). Others describe "riskiness" as venturesome decisions on resource allocation and product/market choices involving substantial investment (Covin and Slevin, 1991; Gupta and Basu, 2014). It seems intuitive for both views, entailing affinity with performance gains based on reactive competitiveness increase through risky expansion of their business activities – a typical path for large companies. So, despite aggressiveness and riskiness being recognised in SMEs, their current meanings will undoubtedly differ from the initial ones described above:

- *The scope of aggressiveness.* Unlike its initial interpretation (Clark and Montgomery, 1996; Covin and Slevin, 1991), we find aggressiveness regarding an upper overarching conservative dimension (Gatignon and Xuereb, 1997; Lukas *et al.*, 2001; Venkatraman, 1989b). Instead of processes' rigidity and struggling with competitors, SMEs' literature relates aggressiveness to an adaptive stance based on flexibility and response readiness/agility (Helfat *et al.*, 2007; Martin and Javalgi, 2016). Such features relate to improving internal processes to fulfil the market's requisites, given a desired market share expansion (Liao *et al.*, 2003) or clients' needs/desires that best allow retaining them. However, costs' increases in the exploitation of functional processes are likely to occur because of the tricky problem of the misfit between strategy and the operational structure (Donaldson, 2001; Donaldson and Joffe, 2014). Therefore, one may expect adverse impacts on performance.
- *The riskiness trait role.* Its primary meaning relates to decisions on allocating substantial resources and investments supporting aggressive behaviours in high-risk markets (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). So, extant literature bonds riskiness with aggressiveness rather than with any other of the remaining traits, which is confirmed in the seminal research (Venkatraman, 1989a): "... it is clear that aggressiveness ... is not significantly related to the other dimensions, except riskiness" (p. 956). Although the propensity for risk-taking is associated with innovativeness, SMEs' excessive risk-taking exposure may jeopardise sustainability and erode profits in highly uncertain and hostile environments (Kreiser *et al.*, 2002). Under a dominant EO, the riskiness dimension can relate to broader risks beyond those such orientation implies, like unceasing

enhancements of launched innovations, never-ending product development or recurring investments in modifying processes for flexibility and agility gains. Hence, firms must set up containment measures (i.e. conservative ones), such as imposing a cutline on spending resources with internal procedure changes and product development/enhancement. Entrepreneurship literature associates this endeavour with moderating any further advancements on risky ventures of far higher uncertainty on return (Lumpkin and Dess, 1996; Wiklund and Shepherd, 2005). In sum, adopting conservative strategic measures to limit adverse impacts from excessive uncertainty will not avoid performance undermining.

- *The CO's compound.* The SO theory has been viewing the STROBE model's "aggressiveness" and "riskiness" traits (Miller and Friesen, 1984) as performance compensators (Covin and Slevin, 1991) when firms adopt highly competitive behaviours (Clark and Montgomery, 1996). Their unrelatedness with the other strands made us consider them the only construct's components. Such an approach of dividing STROBE's dimensions into two higher-order constructs, one of them as conservative, has been considered in a few research (Francis and Collins-Dodd, 2000; Leitner and Guldenberg, 2009; Lukas *et al.*, 2001). Therefore, considering riskiness and aggressiveness under the same construct makes sense, characterising such outcomes as a CO.

2.3 Perceived business performance

Perceived business performance (PBP) relates to the performance's subjective assessment through two measures: the firm's growth and profitability. The literature recognises an organisation's "business performance" as a broad concept involving the firm's financial results and economic contribution (Andersson *et al.*, 2022). However, disagreement persists among scholars when it comes to evaluating intangible resources, namely capabilities (Riggs *et al.*, 2024).

The conventional assessment of business performance emphasises profitability (Morgan and Strong, 2003), measured by return on investment as the ultimate test of success (Reese and Cool, 1978). Sharp criticisms of that measure's validity as the sole indicator (Jacobson, 1987) led research to use alternative financial indicators. However, some authors have observed the multidimensional nature of business performance and the misleading accounting measures due to inadequate intangibles handling and sources sub-evaluating competitive advantage (Bharadwaj *et al.*, 1993), suggesting assessments based on companies' growth (Clark, 1999). Regarding SMEs, there is no agreement on measuring performance (Day and Wensley, 1988), though there is a preference for subjective measures (R. Gupta and Basu, 2014). One being aware of SMEs' subjectivism, the firms' performance assessment must include profitability and growth perceptions. Thus, the performance measurement by Venkatraman (1989a) was applied.

3. Hypotheses

3.1 Relationship between entrepreneurial orientation and perceived business performance

Performance is the most critical dependent variable of interest (Wales, Gupta, *et al.*, 2011), closely related to the strategic effectiveness of management methods (Basso *et al.*, 2009), making it crucial for EO's research (Gupta and Wales, 2017). Backed up by various studies, inherent literature generically supports the EO's positive contributions to performance (Rauch *et al.*, 2009; Zahra and Covin, 1995).

Some scholars, e.g. [Dess et al. \(1999\)](#), emphasise that the advantages of any entrepreneurial strategy supporting innovation are not immediately apparent. So, due to endogenous limitations, not all SMEs achieve a stable, balanced overlap with the successive most critical new environmental requirements. That led researchers to collect, at times, negative results on performance ([Frank et al., 2010](#); [Wiklund and Shepherd, 2005](#)), no significant impacts ([Hughes and Morgan, 2007](#); [Messersmith and Wales, 2013](#)) or favourable outcomes in one of the performance dimensions (e.g. growth) ([Lee et al., 2001](#)) while becoming adverse in another (e.g. profitability) ([Chakravarthy, 1986](#)). However, [Miller and Friesen \(1982\)](#), among others, found that EO favours firms' profits/overall performance, mainly those operating in highly uncertain environments with shortened life cycles in products/business models ([Rauch et al., 2009](#)).

In conclusion, we conceived EO as a higher-order multidimensional construct composed of several dimensions ([Covin and Wales, 2011](#); [Miller, 1983](#)) corresponding to four STROBE-specific traits (analysis, defensiveness, futurity and proactiveness), which have shown theoretical consistency and significant positive impacts on performance over time ([Ho, 2014](#); [Laukkanen et al., 2013](#); [Pour and Asarian, 2019](#)). The SMEs' literature outlines the positive direct effects on PBP resulting from entrepreneurial propensity, especially regarding growth and profitability ([Herath and Mahmood, 2014](#); [Walker et al., 2015](#)). Therefore, it is expected for EO to be positively related to performance. Accordingly, we state that:

H1. The EO positively impacts the PBP.

3.2 Relationship between conservative orientation and perceived business performance

Research tackling CO, specifically within the SMEs' SO literature, is undeniably scant. A few research ([Eggers et al., 2013](#); [Francis and Collins-Dodd, 2000](#)) signal that a CO conceptualised as an independent construct will, at best, be benign. The results of both studies support the hypothesis that CO negatively impacts performance, and such conclusions coincide with the ones we are looking for. This study takes CO as an independent construct from EO, comprising the "aggressiveness" and "riskiness" dimensions. Matching today's view, SMEs' aggressiveness concerns the adaptiveness of internal resources/processes to become flexible, ensuring response readiness/agility gains enough to allow expansion on markets and customer retention. Despite the changes/improvement in the value chain's structure towards such pursued gains, the contingency literature ([Luo and Donaldson, 2013](#)) stresses the negative short-term impact on performance from the internal reorganisation. Such corresponds to a hardly surmountable imbalance between structure and contingency, i.e. the structure's difficulty in reaching a satisfactory quasi-fit enough to match the strategy contingency's level. In other words, a company may not fully offset increased exploration costs from structural and process changes aiming for gains in flexibility and agility to improve market effectiveness.

The research literature indicates that in the context of SME's riskiness dimension, a firm's exposure propensity is often associated with innovativeness, an essential aspect of entrepreneurial behaviour. This association extends beyond the typical risks firms face, highlighting the inherent link between aggressiveness and risk ([Venkatraman, 1989a](#)). It is worth noting that entrepreneurial SMEs often bear excessive risk due to a mismatch between the effectiveness of their resources when wanting to adjust to the requirements of the innovation process, i.e., they tend to worsen operations' inefficiencies from technological process changes. Therefore, the risk becomes an undeniable factor the SME must contend with. Under risk-excessiveness, SMEs will set up conservative containment measures by imposing restrictions on internal process changes and further resource investments. On the

one hand, that limits expenditures with resource expansion, but on the other, it will compromise the EO's needs.

In line with the reasoning above, the textual appliance of Venkatraman's riskiness questionnaire becomes equivocal once the ingrained assumption is that risk will pay off insofar as it enhances performance. To properly operationalise our view of riskiness aligning it with prior research (Byrd *et al.*, 2006; Chan *et al.*, 1997; Hooper *et al.*, 2007), all modes of the original scale are considered on the opposite, i.e. the direct one in reverse mode and the reversed ones into the direct mode, then calling the construct as "risklessness". Doing so gives a plain measure of risk-protective limits under a general assumption of the risk that EO conveys. Accordingly, we state the following:

H2. The CO negatively impacts the PBP.

3.3 Synergistic effect of conservative orientation and entrepreneurial orientation on perceived business performance

According to the explananda beforehand unfolded, the synergistic effect concerns the "fit by moderation" concept (Chan *et al.*, 1997; Chan and Huff, 1993), i.e. synergistic interaction among two variables, a topic well established through the contingency theory (Donaldson and Joffe, 2014) and in a few strategy's works (Venkatraman, 1989b) as well. Its appliance to this study relates to the performance generated by the EO effect when CO interacts with this independent variable by moderating its repercussions on PBP. Such moderation may increase the performance's dependent variable predicting power (R^2), i.e. the overall performance. When a satisfactory fit between CO and EO exists, i.e. if CO outturn satisfies the independent variable requirements EO, a significant positive effect of the synergistic result (CO \times EO) on PBP can confirm the fit so that performance may increase. Any performance-driven firm will introduce organisational changes in the structure caused by the strategy's deployment at the value-chain processes' level, expecting them to lead to a performance increase. Particularly proactive SMEs dealing with uncertainty will tend to adopt organic structures' low functional specialisation (Burns and Stalker, 1961; Lawrence, 1993), which helps to find the flexibility and operations' agility searched. Consequently, while SME financial results attributable to processes' efficiency will expectedly tend to erode due to operative flexibility gains, the economic impacts of market effectiveness have somehow propensity to increase. Any performance gain emerging from these two antagonistic outputs will depend upon the structure's tolerable fitting of the strategic contingency's increase. The abovementioned reasoning explains how the synergistic effect between structure and strategy may positively or negatively but significantly impact performance. Under such a conundrum, the SME's success here involves primarily setting up a structure supporting the dominant entrepreneurship strategy while struggling to restrain/invert the processes' lower efficiency/increasing costs and expand critical tasks' agility. Although inefficiency impacts performance meaningfully, it is possible to manage it so that the company's structure is not overly committed to a single idea – that of innovating. Finally, one needs to set risk limits on the excessiveness of debt a firm may incur when supporting change and increased adaptability. This bidirectional configuration of structure and management leads us to consider the strategies of these companies as ambidextrous or hybrid. Extensive research has been conducted on the concept of ambidexterity (e.g. Cao *et al.*, 2009; Kortmann, 2011; Shang and Guo, 2017; Wei *et al.*, 2014), which refers to the ability of an organisation to manage and balance innovation and efficiency in its operations. Results evidence the performance gains organisations may achieve by adopting such a

strategic approach. Conversely, the SHO's approach remains in the initial stages. Therefore, this paper aims to contribute to advancing this line of research.

To conclude, the beneficial effects of CO must arrive through its interaction with the leading EO. The ensuing literature (e.g. [Pertusa-Ortega et al., 2009](#); [Sumer and Bayraktar, 2012](#)) underlines the strength of the positive relationship between hybrid strategies and profitability, depending on the number of generic dimensions emphasised and the inclusion of low-cost as a key-component ([Spanos et al., 2004](#)). Thus, we expect CO and EO collusion to affect PBP positively. As such, we formally state that:

H3. The interaction between the CO and EO positively impacts the PBP.

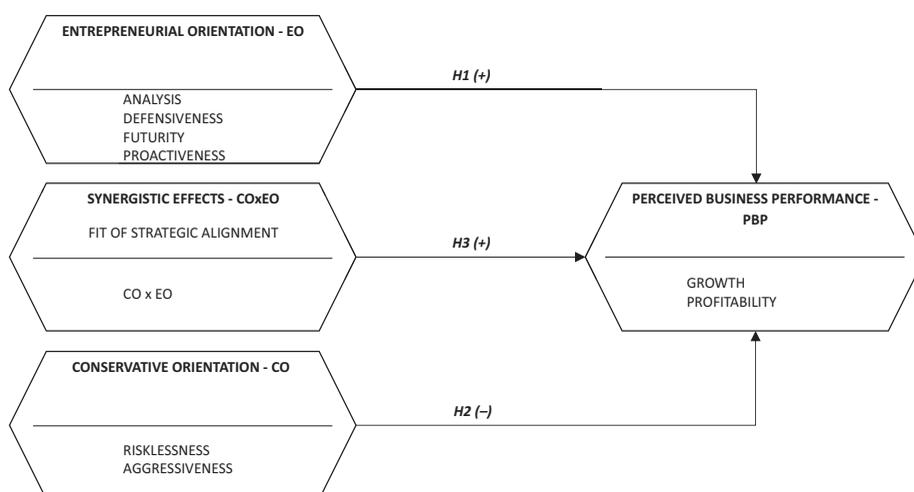
[Figure 1](#) below resumes all the beforehand-raised hypotheses.

4. Method

4.1 Sample and data collection

This study relies on a survey of Portuguese SMEs, including micro-firms, belonging to highly dynamic and turbulent innovative med/high-tech sectors. One may find several reliable reasons to elect Portugal as more than recommendable for a field study like one's own. Among the various reasons, we name the following ones: GDP growth (%yoy) of 2.2 against EC aggregate of 0.6; the surplus state accounts for 0.8% against -3.2% of EC aggregate; country's employment of recent graduates ranks 13 with 81.7% against 79.6% of the Euro area; the Gini coefficient of equivalised disposable income shows positive evolution by regressing from 33% to 32% while EC area goes into opposite direction from 30.3% to 30.5%. Finally, a fashionable way of business and social innovation progress Portugal, converting it into a vibrant place within the most developed living patterns. By not being a flagship country nor one of lesser importance, it can resemble many other European countries quite further than the usual top ones (e.g. Germany, France, Italy or Spain).

We used SME criteria following the European Commission definitions (2009). The SABI NEO international database was the one we used to collect the required companies' data.



Source: Figure by authors

Figure 1.
Theoretical full model
and hypotheses

The economic activity was encoded from CNAE93 Rev.1 index to fulfil the technological condition, with 13 sectors elected, following a similar selection from previous studies (Cepeda-Carrión *et al.*, 2016; Felipe *et al.*, 2020). Several other filters ensured that the SME status followed the EC guidelines. All recommended literature guidelines were followed (Urbach and Ahlemann, 2010). From the elected sample, 128 companies became available to participate, and 95 generated responses. The outcome was 90 usable surveys (22.67%), with 31 companies (34.4%) belonging to four high-tech sectors and 59 (65.6%) belonging to the nine remaining sectors related to medium-to-high and high-tech intensity (see Table 1).

4.2 Measures

According to the literature (Henseler, 2017), through analysing the relations between variables and indicators, a kind of theoretical construct is identifiable whose nature allows for classifying it as of design, i.e. artefacts, due to their application in concepts such as management instruments. Particularly emphasised in the most recent theoretical works (Liu *et al.*, 2022; Yu *et al.*, 2021), at least two theoretical concepts can be found in SEM: behavioural concepts and forged concepts. While formers are assumed to exist in nature (e.g. feelings, perceptions, behaviours, etc.) and operationalised as latent variables caused by a set of observable measurements, the latter ones emerge from elements within their environment, i.e. being context-specific and not existing *per se* in nature, being known as artefacts (Henseler, 2017). To operationalise forged concepts, the literature indicates that they are better specified as emergent variables, i.e. composite variables composed of weighted linear combinations of variables with conceptual unity (Yu *et al.*, 2021). The theory ingrained in the model studied comprises forged concepts modelled as emergent variables composed of latent variables, implying aggregating the latent variables' scores to the database. Therefore, in alignment with the literature (Henseler, 2017, 2021; Yu *et al.*, 2023), the EO, CO and PBP constructs are considered emergent variables, and the model is of the composite type.

The scale sources used are the STROBE's original ones from Venkatraman (1989a) for almost all indicators except Analysis, Futurity and Riskiness, where a revision was applied from the original (Byrd *et al.*, 2006). Specifically concerning the "riskiness" dimension, we converted it into "risklessness" by reversing its scale as previous research did (Byrd *et al.*, 2006; Chan *et al.*, 1997; Hooper *et al.*, 2007). PBP was approached by replicating Venkatraman's (1989a) scales for performance measuring.

For all items irrespective of original scales, a seven-point Likert measure was used, which we believe improves the disagreement/agreement expression levels for each question, besides allowing the enlargement of the central tendency distribution, which will reduce the occurrence of measure problems on measurement model constructs.

For control variables, we used size, age and technology intensity (Felipe *et al.*, 2020). For the latter, we followed previous studies (Real *et al.*, 2006) by encoding it as a categorical variable encompassing two groups (0 for medium-high tech intensity and 1 for high-tech intensity). In terms of size, we avoided the sectorial effect by distributing the values in four groups (1–9 employees, 10–49, 50–99 and 100–249), and for each group, the median was extracted, following methodological recommendations (Danneels, 2008).

4.3 Data analysis

The partial least squares structural equation modelling (PLS-SEM) technique, described in specialised literature as a variance-based structural equation modelling, was applied through SMART-PLS software ver. 4.0.8.7 (Ringle *et al.*, 2022) for testing the research model (Roldán and Sánchez-Franco, 2012). PLS advantages (Popp *et al.*, 2015) are very well-known,

Perceived
business
performance

CNAE-93 CODE	Industry	Frequency	%	Size (average)	Age (average)	
	<i>High-tech industries</i>	31	34.4	30.0	31.6	
21	Pharmaceutical industry	1	1.1	17.0	69.0	
24	Chemical industry, except pharmaceutical	10	11.1	63.6	28.3	
72	Computer activities	18	20.0	23.2	15.2	
74	Specialised scientific and technological activities	2	2.2	16.0	14.0	
	<i>Medium-high tech industries</i>	59	65.6	48.7	23.3	
175	Other textile industries	1	1.1	160.0	27.0	
28	Metalworking industry, except machinery	37	41.1	46.6	27.1	
29	Construction of machinery, mechanical equipment	10	11.1	30.1	16.3	
31	Construction of machinery, electrical equipment	2	2.2	44.5	42.5	
32	Manufacture of electronic equipment and appliances	2	2.2	83.0	24.0	
45	Sales, maintenance, spare parts – vehicles	2	2.2	12.5	13.5	
51	Air transport of goods	1	1.1	15.0	10.0	
52	Storage, handling of goods	2	2.2	23.5	39.0	
92	Gambling and betting activities	2	2.2	23.0	10.5	
		90	100.0	42.9	25.9	
	<i>High-tech industries</i>					
	Sales revenue			Assets total		
	≤ € 1m	14	45.2%	≤ € 1m	14	45.2%
	€ +1m to 10m	12	38.7%	€ +1m to 7m	11	35.5%
	€ +10m to 20m	1	3.2%	€ +7m to 14m	3	9.7%
	€ +20m to 30m	2	6.5%	€ +14m to 21m	1	3.2%
	€ +30m to 40m	1	3.2%	€ +21m to 27m	1	3.2%
	€ +40m	1	3.2%	€ +27m	1	3.2%
	Total	31	100.0%		31	100.0%
	<i>Medium-high tech industries</i>					
	≤ € 1m	17	28.8%	≤ € 1m	19	32.2%
	€ +1m to 10m	33	55.9%	€ +1m to 7m	27	45.8%
	€ +10m to 20m	8	13.6%	€ +7m to 14m	9	15.3%
	€ +20m to 30m	0	0.0%	€ +14m to 21m	1	1.7%
	€ +30m to 40m	1	1.7%	€ +21m to 27m	2	3.4%
	€ +40m	0	0.0%	€ +27m	1	1.7%
	Total	59	100.0%		59	100.0%
	Descriptive of survey respondents					
	<i>Department</i>	<i>N</i>	<i>%</i>			
	General management	83	92.2			
	Finance	6	6.7			
	Production	1	1.1			
		90	100.0			

Table 1.
(continued) Descriptive statistics

CNAE-93 CODE	Industry	Frequency	%	Size (average)	Age (average)
<i>Gender</i>					
	Male	77	85.6		
	Female	13	14.4		
		90	100.0		
<i>Age</i>					
	≤ 30	3	3.3		
	31 ≤ to < 40	21	23.4		
	41 ≤ to < 50	36	40.0		
	≥ 50	30	33.3		
		90	100.0		
<i>Instruction</i>					
	PhD	2	2.2		
	Post-grade	12	13.3		
	Graduated	56	62.2		
	Professional learning	8	8.9		
	Medium or basic education	12	13.3		
		90	100.0		

Table 1. Source: Table by authors

particularly concerning interaction effects (Chin *et al.*, 2003) and complex model assessment (Hair *et al.*, 2012). Furthermore, the literature identifies PLS as an appropriate choice for component score collection in subsequent analyses when foreseeing multidimensional construct modelling by applying the two-stage approach (Wright *et al.*, 2012). Finally, besides its suitability for construct analysis, empirical simulation studies (Sarstedt *et al.*, 2016) and theoretical developments (Henseler *et al.*, 2014) recommend PLS when composite models are sustained, which is the case here due to the consistency of path modelling estimates (Rigdon, 2016). Another reason for using PLS is our need to use component scores in subsequent analysis for multi-dimensional constructs (Wright *et al.*, 2012). Once our research model used second-order composites, scores were collected from a global model with all first-order measurement models drawn, designing all indicators' constructs as composites mode A.

4.3.1 Multidimensional composites' specifications in the research model. According to Becker *et al.* (2013), when calculating standardised regression coefficients in smaller samples, mode A (correlation weights) is preferable to mode B (regression weights), as well as when a medium predictive power (R^2) is expected. By turn, mode B optimises OLS regression weights when assumptions hold, maximising the composite correlations. Considering the research model, CO and EO are composites we estimated in mode A (Henseler *et al.*, 2014). Past research on EO systematically kept a reflective status specification for the EO's construct, whether drawn as a common factor or a mode A's composite. The supporting theory (Basso *et al.*, 2009; Covin and Slevin, 1989, 1991; Dess *et al.*, 1997; Lumpkin and Dess, 1996; Venkatraman, 1989a) for this specification takes the EO's inherent dimensions as manifestations correlated sharing a common topic, that of conceptual characteristics that describe the entire orientation whatever be the level of expression of each of dimensions (Jarvis *et al.*, 2003). The CO composite drawn in mode A is due to the expected matching behaviour among its two dimensions. That means when aggressiveness fluctuates, the risk indicator must behave similarly, which matches

Venkatraman's analysis (1989a) of a high correlation among them. As we considered risk analysis by evaluating risk containment, i.e. inverting direct and reverse modes used at Venkatraman original scales, it means that once aggressiveness rises, risklessness should lower. Concerning PBP, growth and profitability dimensions were equally drawn in mode A because of their intrinsic correlation. A firm may incur substantial performance growth due to the success of the EO strategy. Notwithstanding, profitability may not follow an equivalent impulse. That is because the environmental unpredictability growth allied to the rise of EO's activities may lead that firm to see raised own severity condition (Block *et al.*, 2022), i.e. somehow margins' percentual decrease despite its absolute growth. Even so, depending on the greatness of economic growth and despite financial constraints, profitability will tend to rise necessarily, even marginally, but in a satisfying way (Donaldson, 2001). Therefore, as applied in later studies to Venkatraman's (1989a) seminal work (Byrd *et al.*, 2006; Herath and Mahmood, 2014; Walker *et al.*, 2015), it is clear that both dimensions are correlated, thus justifying the inherent construct in mode A.

4.3.2 *Common method bias*. Describing it simply, common method bias (CMB) can occur when people's responses are influenced by the way the question is asked, that is, by the instrument rather than their actual beliefs or attitudes. The instrument may introduce a bias – variances – affecting the results, contaminating them with errors from biased instrument reading. Taking into consideration Podsakoff *et al.*'s (2012) remedies to apply when CMB becomes detected, we followed the literature guidelines for its detection (Kock and Lynn, 2012) by measuring vertical and lateral collinearity through a variance inflation factors VIF test. As any of the VIF measures of the inner model stands far below 3, we get assured there will be no collinearity, and so CMB (see Table 2).

5. Results

5.1 Measurement model

According to the existing theoretical insights concerning the constructs indicators' estimation (Henseler, 2017; Rigdon, 2016), the primary constructs drawn represent artefacts, meaning forged concepts whose indicators will likely be correlated, resulting in the use of correlation weights for which they were estimated in Mode A. Lower-order components (LOC) indicators and dimensions show values greater than 0,7 for almost all loadings, overall matching the literature recommendations (Carmines and Zeller, 1979) (see Table 3). Concerning the constructs' internal consistency reliability evaluation, Jöreskog's composite reliability index (CR) (Werts *et al.*, 1978) was applied, finding values above 0,7 for all constructs. Besides, the constructs' convergent validity measurement satisfies the inherent criteria by being above the 0,5 standard value (Fornell and Larcker, 1981). The constructs' discriminant validity condition results, obtained through two tests – Fornell–Larcker criterion and heterotrait–monotrait ratio (HTMT) 0.85 – fully match what specialised literature stresses as validation requirements, particularly the conservative HTMT 0.85 test once being the most demanding (Franke and Sarstedt, 2019) (see Table 4). We also assessed

VIF Variables	EO	CO	PBP	SIZE	AGE	TEC.INT
	1.334	1.165	1.404	1.129	1.163	1.066

Note: It regards model 1
Source: Table by authors

Table 2.
CMB

EBR

Construct/dimension/indicator	Weights	Loadings	Jöreskog's rho_C	Convergent validity AVE
<i>EO (MC) (composite mode A)</i>			<i>0.893</i>	<i>0.676</i>
Analysis (composite mode A)	<i>0.325</i>	<i>0.880</i>	<i>0.785</i>	<i>0.558</i>
Information systems provide support for decision-making	0.261	0.647		
When confronted with a major decision, we usually try to develop a thorough analysis	0.180	0.620		
Workforce planning and performance appraisal of senior managers	0.771	0.933		
Defensiveness (composite mode A)	<i>0.247</i>	<i>0.807</i>	<i>0.881</i>	<i>0.713</i>
Use of cost control systems for monitoring the performance of value-generating activities	0.218	0.797		
Use of production management techniques for value-generation activities	0.372	0.840		
Emphasis on product quality through the use of quality circles	0.576	0.892		
Futurity (composite mode A)	<i>0.334</i>	<i>0.838</i>	<i>0.811</i>	<i>0.598</i>
We emphasise basic research to provide us with future competitive edge	0.603	0.893		
Formal tracking of significant general trends	0.105	0.534		
Forecasting key indicators of operations	0.481	0.843		
Proactiveness (composite mode A)	<i>0.310</i>	<i>0.759</i>	<i>0.833</i>	<i>0.633</i>
Usually, the first ones to introduce new brands or products/services in the market	0.432	0.844		
Constantly on the lookout for businesses that can be acquired	0.611	0.926		
Operations in larger stages of the life cycle are strategically eliminated	0.120	0.575		
<i>CO (MC) (composite mode A)</i>			<i>0.712</i>	<i>0.552</i>
Aggressiveness (composite mode A)	<i>0.673</i>	<i>0.744</i>	<i>0.876</i>	<i>0.703</i>
Cutting prices to increase market share	0.449	0.875		
Setting prices below the competition	0.308	0.737		
Seeking market share position at the expense of cash flow and profitability	0.424	0.895		
Risklessness (composite mode A)	<i>0.672</i>	<i>0.743</i>	<i>0.870</i>	<i>0.769</i>
We seem to adopt a rather conservative view when making major decisions	0.610	0.895		
A tendency to trigger or support projects where the expected returns are more reliable/certain	0.529	0.858		
<i>PBP (MC) (composite mode A)</i>			<i>0.923</i>	<i>0.857</i>
Growth (composite mode A)	<i>0.581</i>	<i>0.937</i>	<i>0.902</i>	<i>0.756</i>
Sales growth position relative to competition	0.413	0.885		
Satisfaction with sales growth rate	0.263	0.771		
Market share gains relative to competition	0.458	0.943		
Profitability (composite mode A)	<i>0.499</i>	<i>0.914</i>	<i>0.889</i>	<i>0.800</i>
Satisfaction with return on sales	0.610	0.915		
Advantageous financial liquidity position relative to competition	0.506	0.873		

Table 3.

Construct reliability and validity

Notes: ρ_C = composite reliability. AVE = average variance extracted. MC = multidimensional construct

Source: Table by authors

the saturated model's fit by measuring the external validity of its primary constructs (EO and CO). The proceedings relate to a two-tailed bootstrap for the assessment of HI95 and HI99 percentiles of SRMR (standardised root means squared residual), d_ULS (unweighted least squares discrepancy) and d_G (geodesic discrepancy). Results point out that the measurement model cannot be rejected as their fits are lower than HI95 and HI99, meaning that composites act within a nomological net rather than as individual manifest variables (Henseler, 2017) (see Table 5).

5.2 Structural model

The study of the structural model corresponds, in fact, to two models. The first one (Model 1 or "the model") is sequential to the generic model and an essential requirement for Model 2, the latter contemplating the synergistic effect of interaction between the CO and EO constructs. Thus, once structural Model 1 is fully validated, Model 2 extensively expresses the SHO theory applied to SMEs we intend to test. Regarding graphical representation, we only display Model 2.

According to the literature (Benitez *et al.*, 2020; Henseler, 2021), we assessed the estimated model's fit by repeating equivalent proceedings as applied to the saturated measurement model's fit assessment. Table 5 shows that the estimated model cannot

	(HTMT ¹ and Fornell–Larker criterion)					
	EO	CO	PBP	AGE	SIZE	TEC.INT
EO	0.822	<i>0.312</i>	<i>0.499</i>	<i>0.118</i>	<i>0.150</i>	<i>0.151</i>
CO	0.018	0.743	<i>0.768</i>	<i>0.307</i>	<i>0.163</i>	<i>0.238</i>
PBP	0.423	-0.312	0.926	<i>0.041</i>	<i>0.062</i>	<i>0.097</i>
AGE	-0.110	0.080	0.012	n.a.	<i>0.296</i>	<i>0.128</i>
SIZE	0.142	-0.008	0.060	0.296	n.a.	<i>0.043</i>
TEC.INT	0.132	0.104	-0.085	-0.128	-0.043	n.a.

Table 4.
Constructs' assessment – discriminant validity*

Notes: *Above diagonal: HTMT ratio (in italics) for all constructs. Down under diagonal (included): Fornell–Larker criterion for all constructs. n.a. = non-applicable; ¹HTMT 0.85 threshold according to Franke and Sarstedt (2019), Hair *et al.* (2017), Henseler *et al.* (2014), It regards model 1

Source: Table by authors

	Value	HI95	HI99
<i>Saturated model</i>			
SRMR	0.051	0.074	0.085
dULS	0.173	0.362	0.481
dG	0.079	0.143	0.183
<i>Hypothesised model (Estimated)</i>			
SRMR	0.054	0.074	0.086
dULS	0.195	0.366	0.484
dG	0.082	0.143	0.183

Note: It regards model 1
Source: Table by authors

Table 5.
Model fit

equally be rejected as their fits are lower than HI95 and HI99. As the estimated model accomplishes such pre-requirement, we can equally infer, as before for the saturated model, that the composites act within a nomological net rather than as individual manifest variables (Henseler, 2017).

For measuring the structural model, the specified steps ensued by the literature were followed (Hair *et al.*, 2022), firstly looking for potential collinearity issues through the VIF test that may occur when any of the antecedent variables of the endogenous construct shows a value surpassing the 3,3 thresholds. Table 6 shows that the highest VIF attains 1.064 (1.068 at Model 2), confirming the absence of any collinearity issues.

The next step was accomplished by measuring the explained variance (R^2) (Falk and Miller, 1992) of the endogenous construct PBP, the hypothesised direct effects and the synergistic effect in the model. As can be noticed (see Table 6 and Figure 2), EO is the main contributor to PBP variance (Model 1–19.3%; Model 2–19.8%). Hypotheses were measured by a one-tailed bootstrap of 10,000 subsamples, providing *t-values* and confidence intervals to assess the relationships' statistical significance (Roldán and Sánchez-Franco, 2012). The two hypothesised direct relationships (*H1* and *H2*) were supported in both models. The exogenous variables (EO and CO) have moderate and small effects on PBP in Model 1, as stated by the f^2 value representing the effect size of latent variables acting over the dependent constructs (Cohen, 1992), as well in Model 2.

We also tested Model 2 to the significance of *H3* concerning the interaction effects of both strategy dimensions over PBP. Following the current literature recommending the two-step approach for the interaction assessment (Hair *et al.*, 2022) concerning its significance, we conducted a one-tailed bootstrap confirming the validity and significance of said hypothesis at the 0.05 p_{value} level. Its strength, evaluated by Cohen's test of the effect size (Cohen, 1988), shows a value of 0.063 which is considered small ($0.02 \leq f^2 < 0.15$).

The explanatory power of our model was equally assessed by one examining the level of the coefficient of determination (R^2 Model 1: 0.299; Model 2: 0.341), resulting that with interaction effects, R^2 increases by about 14% becoming a piece of worthy information for the supporting arguments of the SHO theory up here exhibited. Furthermore, we tested the model using $PLS_{predict}$ to assess the model's predictive performance. Literature (Shmueli and Koppius, 2011) points out that a model needs to be tested out-of-sample to detect predictive power. For the assessment, all procedures used in prior research (Roldán *et al.*, 2018) were followed by applying the said algorithm (Shmueli *et al.*, 2019). As shown in Table 7 below, the three steps were fulfilled, resulting in both models' high predictive power confirmed by PBP dimensions GRW and PRF.

6. Discussion

This study analyses how SHO impact the firms' PBP. The STROBE model's full dimensions allowed us to define the EO and CO, two higher-order constructs essential for SHO's built-up. Unsatisfactory results from several studies after Venkatraman led researchers to discharge some of the dimensions (Basu and Gupta, 2013; Morgan and Strong, 2003) or the STROBE model itself, while others applied a few dimensions as a measuring instrument of entrepreneurship (Gupta and Wales, 2017; Wales, Gupta, *et al.*, 2011) alternative to Covin/Slavin or Lumpkin/Dess approaches. However, beyond some works on ambidexterity (He and Wong, 2004; Henderson and Clark, 1990), studies have yet to be discovered using STROBE dimensions' whole set configuring an SHO approach by two higher-order opposing orientations.

Model 1	Direct effect	p-value	t-value	BCCI	Support	VIF	Explained variance %	f ²
PBP ($R^2 = 0.299/Q^2_{\text{predict}} = 0.163$)								
H1 (+): EO	0.456	0.000	5.829	5% [0.329 ; 0.585]	Yes	1.064	19.3	0.279
H2 (-): CO	-0.316	0.000	3.365	[-0.462 ; 0.116]	Yes	1.021	9.9	0.140
Control variables:								
SIZE	-0.037	0.667	0.431	2.5% [-0.220 ; 0.116]				
AGE	0.085	0.447	0.760	[-0.147 ; 0.292]				
TEC.INT	-0.216	0.267	1.110	[-0.620 ; 0.138]				
Model 2 (with synergistic effects)								
PBP ($R^2 = 0.341/Q^2_{\text{predict}} = 0.185$)								
H1 (+): EO	0.469	0.000	5.848	5% [0.341 ; 0.605]	Yes	1.068	19.8	0.313
H2 (-): CO	-0.289	0.001	3.145	[-0.434 ; -0.139]	Yes	1.040	9.0	0.122
H3 (+): CO × EO	0.216	0.015	2.183	[0.016 ; 0.342]	Yes	1.060	4.7	0.063
Control variables:								
SIZE	-0.042	0.628	0.484	2.5% [-0.223 ; 0.116]				
AGE	0.046	0.686	0.404	[-0.179 ; 0.269]				
TEC.INT	-0.217	0.255	1.137	[-0.625 ; 0.119]				

Notes: EO = entrepreneurial orientation; CO = conservative orientation, TEC.INT = technological intensity. BCCI bias-corrected confidence interval bootstrapping, based on $n = 10,000$ subsamples. Hypothesised effects were assessed by applying a one-tailed test for a t student distribution (CI 90%). Effects from the control variables were evaluated by applying a two-tailed test (CI 95%)

Source: Table by authors

Table 6.
Structural models
assessment

Perceived
business
performance

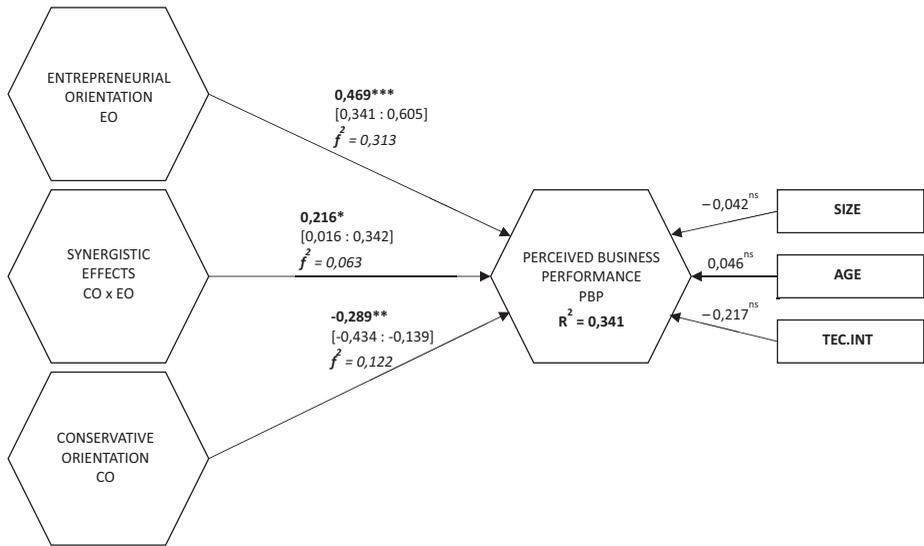


Figure 2.
Structural model 2

Notes: * $p < 0,05$; ** $p < 0,01$; *** $p < 0,001$; ns = non-significant, based on t (9999), one-tailed test. A two-tailed test assessed the control variables' significance

Sources: Figure by authors.

PLS-Predict out-of-sample	Q ² predict	Skewness	PLS-SEM_ RMSE	LM_ RMSE	Error diff.
<i>Model 1</i>					
GRW	0.166	-0.395	0.934	0.970	-0.036
PRF	0.101	-0.380	0.960	1.018	-0.058
	1st. Step: Q ² all positive	2nd. Step: skewness < 1 → RMSE otherwise MAE			3rd. Step: PLS-SEM < LM for both indicators
<i>Model 2</i>					
GRW	0.186	-0.551	0.922	0.970	-0.048
PRF	0.113	-0.436	0.954	1.018	-0.064
	1st. Step: Q ² all positive	2nd. Step: skewness < 1 → RMSE otherwise MAE			3rd. Step: PLS-SEM < LM for both indicators

Table 7.
Models' out-of-sample predictive power

Notes: GRW = economic growth; PRF = financial performance

Source: Table by authors

At the time, the STROBE model seemed to suggest to most researchers/practitioners the existence of a whole set of dimensions that, to some degree and put together, would boost performance. It made sense in the last century, the 90s, when large firms were the protagonists of economic relevance by joining processes' efficiency through scale economics and market effectiveness through differentiation's uniqueness. The turn-down

to the 21st century dictated success's critical factors of entrepreneurship, innovation, processes' flexibility and market readiness, legitimating SMEs as new leading protagonists. By such a cornerstone, we unfolded a strategic model's arguments to explain why SMEs operating in disruptive, fast-changing environments perform successfully by combining entrepreneurial behaviour, adaptive flexibility, processes' response readiness and protective conduct against higher-risk uncertainty innovation. To that, we reinterpreted risk and aggressiveness, finding arguing for an explanandum about how the defensive behaviour of the CO sums up.

To catch SHO's essence at SMEs, we developed EO and CO constructs representing both the entrepreneurial and opposite approaches. Our results show the extreme significance of the impact of exogenous higher-order constructs, EO and CO, on PBP, with opposite effects, supporting hypotheses *H1* and *H2*. However, having apparent contradicting strategic effects on performance does not qualify a firm as a hybrid strategy performer; the sum-up of both strategies' results must generate benefits increase. To this extent, the measurement of SHO's effectiveness should necessarily comprise both strategic constructs' interaction, $CO \times EO$, acting on PBP. In the aftermath, the inherent *H3* hypothesis was validated, meaning there occurs fit enough between CO and EO to raise performance, as demonstrated by the increase of PBP's predictive power.

6.1 Theoretical implications

This study offers essential contributions to a management theory applied to SMEs. A comprehensive assessment of theoretical reasons and empirical evidence identifies five key theoretical developments.

Firstly, we assessed and validated all SO strands by reinterpreting the "aggressiveness" and "riskiness" dimensions (Gupta and Basu, 2014; Venkatraman, 1989a). Further, a theoretical comprehensive reasoning in supporting a new STROBE configuration that captures the EO and CO composing is offered, those being the two critical SOs with which most proactive SMEs deal.

Secondly, the new configurational approach (Deutscher *et al.*, 2016) to the STROBE model and the theoretical reasoning built up from the contingency theory allow the unveiling of SMEs' SHO through synergistic interaction of fit by moderation (Donaldson and Joffe, 2014). We successfully tested the SHOs' existence (Claver-Cortés *et al.*, 2012; Hill, 1988; Lukas *et al.*, 2001; Spanos *et al.*, 2004), which come from individual effects of both dimensions on PBP added to their synergistic interaction.

A third contribution of more confirmatory usefulness accrues from what EO's intensity allows concerning the innovative processes/products. Results evidence that at high-tech intensity sectors, EO from SMEs operating shows being the leading dimension at the core of strategic behaviour, which, according to entrepreneurship literature, remains focused on the markets surrounding, i.e. contingently determined (Gupta *et al.*, 2013). Its proactiveness favours innovation and experimentalism, significantly impacting performance despite a risk-oriented escalation. That means the higher the EO, the higher the risk-taking; such a conclusion aligns with most of the research on EO (Cacciolatti and Lee, 2016; Morgan and Strong, 2003; Sarooghi *et al.*, 2015; Zhou and Li, 2010).

Our fourth contribution emerges from the finding, not reported till now, of the coexistence of another strategic dimension CO, composed of aggressiveness and risk containment orientation, remaining essentially focused on market-adaptive competitiveness through better balancing the processes' flexibility and the market-readiness. The cornerstone is not allowing inefficiencies to scale up wildly, compromising cost gains gathered in critical tasks. At the same time, one expects economic growth enough from

innovativeness to more than pay off the contingent increase in processes' costs. The harmful unavailability of CO was fully supported by *H2* validation. Our theoretical build-up for supporting this dimension's existence is based on past work (Helfat *et al.*, 2007; Lukas *et al.*, 2001; Martin and Javalgi, 2016), and empirical results also go with previous research (Leitner and Guldenberg, 2009; Parnell *et al.*, 2004; Wu *et al.*, 2007). On the other hand, the collected interaction results discussed below help explain how SMEs may successfully turn the CO dimension's adverse effects into positive ones.

Our last contribution stems from the interaction study, in which $CO \times EO$ collusion effects over the PBP are significant. The literature on strategy has named hybrid strategies, or SHO, to the aggregate impacts of both contradictive strategic dimensions (Acquaah and Yasai-Ardekani, 2008; Claver-Cortés *et al.*, 2012; Spanos *et al.*, 2004), to which we add now their synergistic interaction which conforms a valuable contribution to the strategy literature. SHO's roots belong to the approach to firms' competition from the hybrid strategy paradigm (Hakala, 2011; Pertusa-Ortega *et al.*, 2009; Sumer and Bayraktar, 2012). According to the extant research, hybrid strategies may develop in dynamic environments where external pressures and competition force organisations to abandon the dominance of mechanistic forms to become flexible through more organic structures (Schilling and Steensma, 2001; Uotila, 2017). When considering the synergistic effects on PBP, the findings reveal increased in-sample predictiveness power (R^2) and out-sample predictiveness power ($PLS_{Predict}$). That means that by prevailing EO as the primary orientation and despite the negative CO's effect, the impact of EO with the CO moderation jointly yields an increase in performance at growth and profitability levels, besides confirming the trustfulness of the model for applying to other data (companies/sectors). To conclude, one found enough evidence for the existence of SHO in entrepreneurial SMEs, and we disclosed the relevant impact of the $EO \times CO$ synergistic combined effect.

6.2 Implications for practitioners

A set of recommendations is disclosed. We address SME managers needing to re-orient firms to new directions, turning them into more proactive, innovative and performant ones through the rise of value generation, which provides growth, and by increasing added-value retaining, which amplifies profitability.

Firstly, innovation generally pays off at the process level and through new product generation. EO is the best strategy to respond convincingly to fast-changing/volatile markets. It must constitute the dominant endeavour for an SME to succeed and progress.

Secondly, when the market environment is consistently more fast-changing, disruptive and volatile, it will require improved capacities to streamline flexibility gains with the response readiness at core-critical operations that generate most of the value-added. Improving the processes' agility will convey response readiness and higher aptitude to markets' requirements, whether B2B or B2C. That may more than compensate efficiency losses from the absence of economic scale.

Finally, improvements in internal processes aiming for agility gains must be considered only in a way that supports the firm's main endeavour - the EO. This trait must be carefully considered concerning its synergy with EO, which may capitalise or hamper performance. Suppose the management view primarily relies on a discretionary short-term conservative behaviour by prioritising operative costs contention upon flexibility and market-readiness requirements. In that case, CO may become a severe contingency to EO due to the binding of investments to a spend containment criteria, which de-correlates it from EO. That way, ROI may be severely hampered by one not reaching a coveted rebalance on the effectiveness of the new processes because the gains at the market's operations level only partially

compensate for the rise of the costs of the new operative processes. On the other hand, a CO primarily headed on granting all entrepreneurial requirements may equally hamper performance. That is because of the permanent creative euphoria that entrepreneurship may cause by generating internal processes' sunk costs due to the never-ending exploitation of products/processes' betterment. What will become a genuinely well-balanced relationship between EO and CO, enabling them to capitalise on performance by uplifting it, is the EO primacy as the firm's primary characterising. That will determine the need for flexibility improvements and processes' agility gains that CO must grant. One adds that the CO's risk containment strand must follow up thoroughly on cost escalation in that proper pre-planning about expenditure limits must exist to set up the EO's border.

6.3 Implications for society

Finally, we also address society. From a sociological perspective, it is undeniable that scholars belonging to such a thinking strand increasingly apply the term post-industrialism, related to a concept which defines the current shifts societies are experiencing in the re-configuration of capitalism and class (Stevens, 2019). Other approaches (Murphy, 2017) of a more regional nature, i.e. American, advoke the existence of what they call "auto-industrialism" as the defining term for societies' present way of living as resulting from the DIY-capitalism (i.e. do-it-yourself capitalism). Definitions apart, what may characterise the concept is the consciousness of a reality, never experienced, of a growingly complex world, where the growing resource scarcity due to its finitude contrasts with the human soaring ability for more complex problem-solving each time in what allows an increase of resource-using efficiency (Tainter, 1988). All this leads us to the Jevons paradox (i.e. the growth of resource scarcity despite its more efficient use). In sum, concerning firms and society, asymmetries among countries' regions and between people representing capital and labour keep growing (Gherhes, 2018), driving the increase of work precarity (Stevens, 2019) and poverty (Boulding, 1980).

Therefore, to attempt to invert such a dismal and dystopic future prognosis from sociological scholars, the management sciences have significant challenges in providing reliable solutions to support firms' resilience and welfare. This study humbly endeavours to contribute to the finality of SMEs' more steady and prosperous existence concerning the consciousness of the need to improve labour stability and wage fairness, conditions such as requiring a continuous commitment. The cornerstone of our rationale here rests on the owners'/managers' liabilities to society in measuring what each work placement will represent, the opportunity for welfare-live improvement of involved people. Better firms that thrive through managers' steady actions may more fairly redistribute rents and concede labour stability, allowing better living conditions for workers and families under their responsibility. We hope for that and encourage us to share this study.

6.4 Limitations and future research

We mention some limitations to consider when extrapolating conclusions. One stems from the study's cross-sectional nature, requiring a longitudinal approach. Another one resides in the absence of further examinations concerning multigroup analysis. Another restraint is the limitedness of data, focused on firms with med/high-tech intensity. Though advantageous in the early stages of theory development, results cannot be freely extrapolated or generalised to other industrial sectors. Finally, we recommend caution at the time to extrapolate conclusions to other countries due to the economic specificities of the country (Portugal) from where data was collected.

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