



**Entrepreneurial Orientation, Proactive Market Orientation
and Society: Evidence from Public Service Organizations in
Brazil**

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Entrepreneurial Orientation, Proactive Market Orientation, and Society: Evidence from Public Service Organizations in Brazil

Abstract

Purpose: Public service organizations face a critical dilemma: how to generate more value for society but with a much-reduced resource base. The article advances the strategy axis of entrepreneurial orientation (EO) research by examining EO and proactive market orientation (PMO) as joint-strategic approaches to this end, and how the characteristics of public managers may moderate the paths to value creation.

Methodology: The article draws on a unique survey-based dataset developed from Brazilian public service organizations and employs structural equation modelling for hypotheses testing. Post-hoc analysis, by way of analysis of variance, demonstrates the joint impact of the two strategic approaches on public service performance level.

Findings: Entrepreneurial and proactive market orientations are revealed as routes to enhanced service performance, but managers' domain expertise negatively moderates these relationships. Post-hoc analysis reveals how organizations displaying higher levels of *both* orientations realize superior performance, relative to those favouring either/or.

Originality/Value: The study contributes new evidence for EO model specificity by examining a narrowly bounded sample of public service organizations; addresses the neglect of other outcome variables beyond traditional performance, showing the value of EO for society; and offers new insights to the managerial conditions that moderate the positive synergies between EO, PMO and service performance.

Keywords: Entrepreneurial orientation; proactive market orientation; outside-in approach; inside-out approach; service performance; society; public sector; public services.

Introduction

Revealing the benefits entrepreneurship can bring to society has attracted attention from scholars in recent times (e.g. Bacq *et al.*, 2022). Indeed, a belief in creating value for society is deemed central to how entrepreneurship can contribute beyond commercial gains alone (e.g. Vallaster *et al.*, 2018). Public services are founded on this principle and, therefore, represent a particularly apt setting for understanding the role of entrepreneurship for society. Recent contributions to this end include the role of entrepreneurship in mitigating healthcare crises (Ratten, 2021), reducing crime and violence (McDaniel *et al.*, 2021), providing technological innovations for smart cities (Kraus *et al.*, 2021), and for responding to wider social as well as environmental problems (e.g. St-Jean and Labelle, 2018).

To advance discussion of how society could be transformed by entrepreneurship (St-Jean and Labelle, 2018), it is particularly pertinent to focus on public sector entrepreneurship within emerging economy contexts, which together, remain ‘low-frequency’ themes of entrepreneurship studies (Martens *et al.*, 2016). The public service setting is complex as there is a need for services to meet increasing expectations of service value (e.g. Osborne *et al.*, 2021), while operating simultaneously with a reducing resource base under progressive resource constraints (Hodgkinson and Hughes, 2012; Singla *et al.*, 2018). In addition, issues around corruption and accountability, participation, decentralization, economic policy, and administrative reforms in the public sectors of emerging economies add further complexity (Candler, 2002). Subsequently, the ability of public service organizations (PSOs) in emerging economies to positively impact society is increasingly challenged.

To meet this challenge, an integrative model that reconciles an inside-out approach focused on the (re)configuration and (re)deployment of the organization’s existing resource base, with an outside-in approach that positions the user as central to services is needed (e.g. Pinheiro *et al.*, 2021). Specifically, it is argued that PSOs would benefit from an

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entrepreneurial approach to mitigate reducing public revenues, alongside a market-oriented approach to satisfy the expectations of service recipients, for greater economic prosperity and societal value creation (e.g. Kearney and Meynhardt, 2016). This leads to our first research question: *Can entrepreneurial orientation (inside-out) and proactive market orientation (outside-in) enhance public service performance?*

Examining entrepreneurial orientation (EO) as an inside-out approach and proactive market orientation (PMO) as an outside-in approach is consistent with past integrative studies of EO and market orientation (e.g. Boso *et al.*, 2012). Pivotal to performance (Asseraf and Shoham, 2019), the EO of an organization concerns opportunity- and advantage-seeking behaviors that entrepreneurially direct the use of available resources to enhance performance outcomes (Hughes *et al.*, 2021); while on the other hand, PMO addresses the latent needs of service recipients, revealing opportunities for value creation of which the ‘customer’ is unaware (Narver *et al.*, 2004). Together, EO and PMO have the potential to both reconcile the contrasting demands placed upon PSOs and enable public services to make enhanced contributions to society through greater value creation.

However, Asseraf and Shoham (2019) state clearly that managerial ideologies determine how firms engage with strategic approaches. For PSOs specifically, management characteristics are somewhat peculiar and can influence entrepreneurial behaviors in the sector (e.g. Kraus *et al.*, 2021). For this very reason, a second research question is posed: *Do manager characteristics vary the relationships between these strategic approaches and public service performance?* In response, this study examines whether public managers’ domain expertise and attitude to risk moderate the core relationships between the two strategic approaches and service performance.

To address these questions, this study draws on survey questionnaire data generated across a range of PSOs in Brazil. In doing so, the study makes two theoretical contributions

and one empirical contribution to the entrepreneurship field. First, there remain key knowledge gaps in how entrepreneurship may be cultivated and harnessed by PSOs (Deslatte and Swann, 2020). We address this void by responding to the scant attention paid to the important relationship between EO and market-oriented approaches and social good (Pineiro *et al.*, 2021). The article not only shows the value of public entrepreneurship but also accounts for the capture of the *latent* needs of the citizenry (i.e. through PMO), as well as how managers' characteristics unique to the public sector (e.g. Kraus *et al.*, 2021) moderate the core paths to value creation. Second, and building on the first contribution, there is a large body of research that has considered and examined the synergistic roles of EO and market orientation for *firm* performance (e.g. Montiel-Campos, 2018). However, to the authors' best knowledge, no such studies have examined societal value creation as a key outcome of the synergistic roles of EO and a *proactive* market-oriented approach. Public service performance can be understood as serving the needs of society and providing economic prosperity (Kearney and Meynhardt, 2016). Thus, focusing on this outcome marks an advancement of the entrepreneurship field and specifically, how entrepreneurship can bring benefits to society. Third, this study offers an empirical contribution to the entrepreneurship field by testing an integrated empirical model in a middle-income public sector setting, wherein organizations behave differently from traditional for-profit businesses. In so doing, we address the neglect of both the public sector and the South American region in entrepreneurship research (Martens *et al.*, 2016) and move away from the bias towards Anglo-regions in empirical tests of EO and MO and performance (Montiel-Campos, 2018).

Theoretical background

Asseraf and Shoham (2019) highlight the numerous ways in which outside-in and inside-out approaches have been considered in extant literature. Examples of inside-out approaches

include being technology-oriented, resource-driven, technology-driven, and EO; while outside-in approaches include market-orientation, being market-driven, and customer orientation. In this study, we focus on the service performance effects of EO and PMO to capture the two different strategic approaches outlined.

First, an inside-out approach is focused on firm resources, capabilities, and internal organizational strengths (Quach *et al.*, 2020). For example, Asseraf and Shoham (2019) refer to innovation orientation as an inside-out approach with a focus on creativity, openness to change, foresight, proactiveness, and risk-taking (Asseraf and Shoham, 2019). In a similar vein, the conceptualization of EO adopted by this study positions the phenomenon as an inside-out approach with its emphasis on resource-based capabilities to better utilize limited resources possessed by the organization (Brouthers *et al.*, 2015). While others may determine the EO characteristic of market-sensing, for instance, as being suggestive of an outside-in approach (e.g. Quach *et al.*, 2020), an EO that (re)configures the activities of innovativeness (e.g. supporting creativity and experimentation), risk taking (e.g. large investments with uncertain outcomes), and proactiveness (e.g. acting in anticipation of future demand) points to EO functioning as a dynamic capability of the firm (Hughes *et al.*, 2022; Wales *et al.*, 2021). Such a conceptualization emphasizes the organization-level of analysis within the EO conceptualization (Wales *et al.*, 2020).

Conversely, the outside-in perspective refers to the belief in, and practice of, listening to customers and co-creating value through relationship development with customers, and to which market orientation is central (Quach *et al.*, 2020). Market orientation is closely aligned to recent research in public administration that places service user preferences at the forefront of public services, leading to calls for a focus on PSOs responsiveness to service users' needs and wants (Walker *et al.*, 2011; Osborne *et al.*, 2021). Such calls are aligned with recent developments in the general marketing and management literatures, which now distinguish

between ‘reactive’ and ‘proactive’ market orientation. The former is evidenced by organizations that attempt to ‘discover, to understand, and to satisfy the expressed needs of customers’, while the latter proactive orientation ‘attempts to discover, to understand, and to satisfy the *latent* needs of customers’ (Narver et al., 2004, p. 335 [emphasis added]).

Far from being mutually exclusive, the two approaches can be integrated to develop value offerings (Asseraf and Shoham, 2019). However, scholarly understanding of how they can be used to improve public service performance for societal value creation, and how public service managers might themselves contribute to take advantage of these strategic approaches remains unclear.

Contextualizing EO research for public administration and society

There has been long standing recognition that EO should not be viewed as a panacea, relevant to all and any contexts (Covin and Slevin, 1989). Despite this clear standpoint, the EO literature has been built on empirical investigations in fewer rather than many contexts. Consequently, Wales *et al.* (2020, p. 654) note how ‘contextualized investigations have substantial potential to extend the EO literature into new domains’, which supports Miller’s (2011) earlier observation of a need for greater attention to specific contexts within the EO literature. Public sector entities are identified as a specific context worthy of attention to advance EO scholarship (Wales *et al.*, 2020). While clearly established terms within the EO literature such a ‘new entry’ are somewhat alien to the public sector sphere, the central focus on (new) value creation of EO resonates clearly with the need of public services to deliver increasing levels of value to society.

Based on Wales *et al.*’s. (2020, p. 641) view that “‘being entrepreneurial”—exhibiting EO—can and should be recognized as implying the presence of any and all of [these] manifestations of entrepreneurship’, EO is clearly evident in the public sector (e.g. Deslatte

and Swann, 2020; Swann, 2017). In general, public sector applications of EO are positioned at the organizational level, consistent with the conceptualization of EO as an organizational level phenomenon, strategic orientation, or posture (e.g. Covin and Slevin, 1989; Hughes *et al.*, 2022; Wales *et al.*, 2020). However, when considering the EO literature specifically, public administration investigations are very much in the minority, and this is notable when consolidating the findings of the extant EO—performance literature. Within this cluster of EO research, the focus has been squarely on traditional firm performance (e.g. profitability, sales growth, return on investment, satisfaction, global success ratings, etc.) (see Rauch *et al.*, 2009), which has enabled confident conclusions to be drawn on the value of different operationalizations of EO and performance across cultural contexts (Wales *et al.*, 2021). Conversely, however, this has created a huge knowledge void on the role of EO in explaining different performance outcomes within specific contexts, that are equally important, if not more so, when one considers outcomes such as societal value creation.

The recent extensive review of the EO literature by Wales *et al.* (2021) reveals the synergistic ties between entrepreneurship and marketing. However, due to the limited extensions of EO research to specific contexts, outside of traditional for-profit businesses, there is very little understanding of whether a synergistic relationship exists between EO and the core premise of marketing (i.e. being market-oriented). As with EO, there is evidence of market-oriented approaches in public management, which appear to hold performance benefits for PSOs (e.g. Hodgkinson and Hughes, 2014; Stritch, 2016). Nevertheless, existing understanding remains limited, and importantly, given the observed synergistic areas of entrepreneurship and marketing, there have been no concurrent examinations of EO, PMO, and service performance in public services to date. Two works of note are Cervera *et al.* (2001), who reveal EO as an antecedent of market orientation among local governments in Spain, though the authors do not examine the performance effect of EO; and Pinheiro *et al.*

(2021) who report a positive relationship between social entrepreneurship and market orientations and the performance of social enterprises (which could be private, public, or nonprofit). Notwithstanding the insights generated, the two approaches and their synergistic roles for public service performance, and value creation, are worthy of investigation for the advancement of the entrepreneurship field.

Hypotheses development

Proactive market orientation

Market orientation is typically conceptualized in two specific ways: (1) comprising the three components of customer orientation, competitor orientation, and inter-functional coordination (Narver and Slater, 1990); or (2) the organization-wide generation, dissemination, and responsiveness to market intelligence (Kohli and Jaworski, 1990). Though there are a few shared conceptual characteristics—such as the roles of intelligence generation, dissemination, and managerial action—the appropriateness of the former conceptualization for public management is contestable. To elaborate, Osborne *et al.* (2021) observe how the impact of imported strategic approaches for PSOs has been limited because of a focus on cost and market orientation. Central to this interpretation is an understanding of market orientation as being competition-oriented through the ‘[...] creation of a business culture across the firm that is oriented to market performance, which has been prioritized at the expense of a customer orientation’ (Osborne *et al.*, 2021, p. 173).

The treatment of market orientation in public management has, thus, become synonymous with Narver and Slater’s (1990) competitor orientation dimension and deemed central to New Public Management (NPM) (Walker *et al.*, 2011). Yet, it can be argued that the Kohli and Jaworski (1990) market orientation conceptualization is more appropriate for public management, because the customer focus transcends all components of this market

orientation construct, which is considered critical for effective public service delivery and value creation (Hodgkinson *et al.*, 2014; Osborne *et al.*, 2021). As evidence to this, when public management studies have adopted Kohli and Jaworski's (1990) conceptualization market orientation has been associated with positive service performance (e.g. Caruana *et al.*, 1997; Cervera *et al.*, 2001; Flavián and Lozano, 2007; Hodgkinson *et al.*, 2012; Hodgkinson and Hughes, 2014). Conversely, the application of Narver and Slater's market orientation construct to examinations of service performance has been either unsupported (Walker *et al.*, 2011) or observed to have a weaker performance relationship (Shoham *et al.*, 2006).

Going beyond simply determining and responding to public service users' expressed needs and towards capturing and satisfying their latent needs is a step-change for the application of the market orientation construct. In other words, PMO has the potential to enable PSOs to move from being 'user-led' (i.e. reactive) to 'leading-users' (i.e. proactive), avoiding the organizational myopia associated with reactive market orientation (Gromark and Melin, 2013). This development is pertinent to the public sector because, for public services to be sustainable and make a greater contribution to society, PSOs must place service value as central to the management of services (Osborne *et al.*, 2022). More than this, however, PSOs must go beyond the expressed needs of citizens and address their latent needs if public services are to exceed citizen performance expectations (e.g. Narver *et al.*, 2004) and generate new levels of service value. Accordingly,

Hypothesis 1: PMO will be associated with stronger service performance among PSOs.

Entrepreneurial orientation

Entrepreneurial orientation is a deliberate approach to strategy making and is defined as 'the methods, practices, and decision-making styles managers use to act entrepreneurially' (Lumpkin and Dess, 1996, p. 136). As observed in the public sector by Deslatte and Swann

(2020), PSOs engage in the EO activities of risk taking, innovation, and proactivity to enhance performance. Like PMO, EO is conceptualized as comprising strategic actions and behaviors and is, thus, distinguishable from organizational culture (Balasubramanian *et al.*, 2020). As a strategic approach for PSOs, the dimensions of EO can be understood in the following way:

‘Innovativeness’ refers to the quest for creative, unusual or novel solutions to problems and needs, including new services, new organizational forms and process improvements. “Risk taking” involves the willingness to take moderate risk in committing resources to address opportunities. “Pro-activity” ensures that entrepreneurship functions by anticipating and preventing problems before they occur, exhibiting perseverance, adaptability, and assuming responsibility for failure’ (Currie *et al.*, 2008, p. 989).

Notwithstanding the differences between private, public, and third sectors, EO can exist within any organization but the examination of EO among public sector entities has been relatively neglected when compared against the large body of empirical research conducted among private sector entities (Wales *et al.*, 2020). It is essential to emphasize that EO dimensions are activity-based and not outcome-specific, as the outcome (e.g. bottom-line) is likely to vary based on context (e.g. Currie *et al.*, 2008). Thus, EO dimensions are not conceptualized in terms of what end these activities are directed (Morris *et al.*, 2011). Though the private sector, relative to the public sector, is deemed less forgiving of mistakes (Currie *et al.*, 2008), it is important not to assume that PSOs will be more averse to risk than their private-sector peers (Kearney and Meynhardt, 2016).

Despite the relatively limited application of EO in the public sector, there are some notable exceptions which have largely argued for, or empirically demonstrated, positive service performance outcomes emerging from EO. For example, from qualitative interviews with senior public service managers, Currie *et al.* (2008) document how entrepreneurial

behaviors interact within public sector governance parameters to enable the public sector to do more with the resource-base they have. Despite the positive assertions and observations found in the extant public management literature, this should not be interpreted as PSOs with a stronger EO will necessarily perform better than those with a weaker EO (Singla *et al.*, 2018). As Swann (2018, p. 545) identifies, for instance, ‘when used improperly (e.g. excessive risk-taking or rule-breaking) or in the wrong setting (e.g. programmes requiring very high stability or reliability), an EO could have negative effects on performance and damage public value’. Nevertheless,

Hypothesis 2: EO will be associated with stronger service performance among PSOs.

Moderating role of domain expertise and attitude to risk: EO—Performance

Expertise and a positive attitude towards risk are two specific manager characteristics that have been associated with entrepreneurial behavior in the public sector, as observed by Currie *et al.* (2008). First, expertise is typically understood to encompass specialized skills and knowledge of the domain and/or tasks in which individuals work or undertake (Vera and Crossan, 2005). As a form of managerial support, expertise has been argued to facilitate entrepreneurial behavior in the public sector (Meynhardt and Diefenbach, 2012). In the mainstream management literature, expertise is often integrated as a set of knowledge resources (e.g. technical expertise, expertise regarding the development of services, expertise in marketing, and special expertise regarding customer service and management) that collectively enhance an individual’s ability to produce entrepreneurial outcomes through effective identification and exploitation of opportunities (Wiklund and Shepherd, 2003). This same logic holds for the expected outcomes from decisions, thus, managers with greater levels of expertise would be expected to be able to maximize value from existing resources. Therefore,

Hypothesis 3: Managers' domain expertise will strengthen the relationship between EO and service performance.

Second, concerning attitude to risk, Sanger and Levin (1992, p. 88) contend that 'innovative public managers are entrepreneurial: they take risks [...] with an opportunistic bias towards action and a conscious underestimating of bureaucratic and political obstacles their innovations face'. While this speaks directly to the innovative dimension of EO, it serves to highlight how a positive attitude to risk among managers can strengthen EO behaviors. A risk-taking attitude helps to overcome conservative norms, enabling managers to promote innovative initiatives. Moreover, managers with a positive attitude to risk tend to think outside of typical rules and do not fear failure or uncertain results (March and Shapira, 1987).

Though there are multiple levels to management in organizations, EO is expected to manifest in the behavior of individuals across levels, whether that be senior decision-makers or mid-level employees like middle-managers (e.g. Kraus *et al.*, 2019). For instance, middle managers have for many years been identified as more than passive 'actors' in strategy processes (Wooldridge and Floyd, 1990). Subsequently, the entrepreneurship field has examined the roles and influence of mid-level employees on corporate entrepreneurship (Wooldridge *et al.*, 2008), as well as middle- and lower-level employees' enactment of individual EO (Kraus *et al.*, 2019). Middle managers—those located below top managers but above first-level supervision—are expected to be involved in capability development along with senior personnel (Wooldridge *et al.*, 2008). As a dynamic capability of the organization (Hughes *et al.*, 2022), then, the EO–performance relationship is expected to be contingent on managers' (senior and middle) attitude to risk. Thus,

Hypothesis 4: Managers' attitude to risk will strengthen the relationship between EO and service performance.

Moderating role of domain expertise and attitude to risk: PMO—Performance

Regarding the expected moderating role of the two management characteristics for the PMO—service performance relationship, a different narrative emerges. For example, expertise in market sensing is critical to outside-in strategic approaches (Quach *et al.* 2020). An important distinction to note here is that many managers working for PSOs will have high levels of domain expertise but not necessarily expertise in customer (or service user) sensing activities. For example, it cannot be disputed that those managers operating within a public fire and rescue emergency service will clearly have significant expertise within the domain, but this does not necessarily translate effectively to the set of PMO behaviors and their effectiveness. As Peattie *et al.* (2012) observed, in running citizen-facing educational campaigns to reduce grassfires, a fire service adopted conventional promotional media that were ineffective for service performance (as measured by the number of call-outs for grassfires) and the organization neglected more customer-driven solutions to address the problem due to an inferred lack of the right expertise.

This line of theorization is supported by the findings of Hodgkinson *et al.* (2012) who explore the performance effects of market orientation in the context of service outsourcing. Recognizing that external service providers have stronger exposure to customer-driven solutions relative to direct local government delivery, they uncover a much greater performance effect from market orientation for external providers relative to internal service providers (though managers' expertise was not directly accounted for). In the Brazilian context, where outsourcing of services occurs rarely with strong public ownership and funding of services, it would be expected that greater domain expertise may in fact weaken the positive relationship between PMO and service performance. Another example in support of the proposed negative moderation effect of domain expertise is provided by Hurmerinta-Peltomaki and Nummela (1998). They highlight a critical paradox in the public sector

pertinent to this moderation by arguing that “the objective of the public sector is to offer inexpensive services...this objective and the need for customization in [expert] services represent conflicting interests” (p. 70). This observation speaks directly to Osborne *et al.*’s (2021) contention that there has been a traditional bias toward a cost-orientation among PSOs at the expense of a user-orientation. Hence,

Hypothesis 5: Managers’ domain expertise will weaken the relationship between PMO and service performance.

Conversely, managers’ attitude to risk will likely have a positive moderation effect on the PMO–service performance relationship. Gromark and Melin (2013) highlight that focusing strongly on customers emphasizes an outside-in perspective, which in turn, could generate perceived risks among PSOs. The perceived risks attached to PMO will be magnified because PSOs’ decision-making is typically focused on internal costs, which in turn deemphasizes the role of the service customer or user (Osborne *et al.*, 2021). This is because PMO is externally focused on customer ‘value’ and how to embed such value in business practices, which is akin to the customer focused orientation as described by Osborne *et al.* (2021). If the cultural norm among most PSOs is to reduce costs and increase efficiencies, driving forward strategic initiatives that assist in anticipating and discovering service users’ latent needs would require a positive attitude to risk among public managers (given the necessary redirection of already limited resources). Thus,

Hypothesis 6: Managers’ attitude to risk will strengthen the relationship between PMO and service performance.

Methods

Research setting

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The environmental conditions facing public managers in Brazil can be characterized by political shocks, economic instability, and aspirations to achieve high-income country status. To reduce effects that could be attributed to sampling across different regions in Brazil, the target population was limited to PSOs in the southern and south-eastern regions of the country. By focusing on these regions and the country’s main states (e.g. Rio de Janeiro, Sao Paulo and Paraná), the study purposely examines the organizational behaviors and activities of PSOs from the most developed public service infrastructure in the country. This was deemed essential if the insights generated by the study are to have the potential to help transform PSOs in other, less developed regions of the country and indeed other emerging economies.

Data collection and sample

The study sought to develop insights from across a range of public services. To this end, an electronic survey questionnaire was administered across multiple PSOs comprising emergency services, local government, public health services, education, social care, and several ‘other’ services. The survey questionnaire targeted senior or middle-level public managers who held responsibility for strategic decision-making within PSOs based in the southern and south-eastern regions of Brazil. The survey questionnaire was first developed in English and then forward and backward translation was undertaken by native speakers of the respective country languages to ensure measurement items held the same meaning after translation to Portuguese. Potential participants were identified from student alumni directories of participating university institutions in the southern region of Brazil as well as through public sector network connections in the region. Adhering closely to the Tailored Design Method, survey administration comprised initial notification, first wave survey administration, followed by a second wave to non-respondents. Through these actions a total

of 260 participants were contacted and a total of 224 completed questionnaires were received.

A final response rate of 86.15% was achieved. Of this final sample, 74.1% of respondents held senior management positions, with the rest comprising middle managers. The breakdown of PSOs represented in the final sample is as follows: 18.02% Fire and Rescue, 14.86% local government, 10.81% health, 13.06% education, 4.50% social care, and 39.64% 'other' services (excluding 2 instances of missing data).

Measures

EO is conceptualized in the study as comprising the three dimensions of risk-taking, innovativeness, and proactiveness, which are located at the organizational level (Wales *et al.*, 2020). There are two leading schools of thought on EO measurement: the uni-dimensional approach and the multi-dimensional approach (Wales *et al.*, 2021). We adopt the former, which assumes a common effect of the EO dimensions (e.g. Covin and Slevin, 1989), for two reasons informed by Kreiser *et al.* (2002) and Wales *et al.* (2021): (i) the limited empirical evidence of EO and performance in public administration does not lead us to expect differential relationships between the sub-dimensions and key study variables, and (ii) with a focus on an integrative empirical model, there is a need to reduce complexity for accurate modelling as is the case with similar models in the EO literature that concern the entrepreneurial posture of the organization (e.g. Hughes *et al.*, 2021). Measurement items were adapted from the work of Hughes and Morgan (2007) to fit the public sector context. For example, the item 'We always try to take the initiative in every situation (e.g. against competitors, in projects and when working with others)', was adapted to read 'We always try to take the initiative in every situation (e.g. in projects and when working with others)'. Moreover, two items excluded from this final scale were as follows: 'The term 'risk taker' is considered a positive attribute for people in our business' and 'We initiate actions to which

other organizations respond', as these were deemed inappropriate for the public service context, thereby resulting in a final seven-item scale. While Hughes and Morgan (2007) measure the dimensions of EO independently, we chose this scale for our unidimensional measurement as the characteristics captured are less context-specific in comparison to the other established scale of Covin and Slevin's (1989) that includes emphases on R&D, product-lines, and high-risk projects, which do not resonate with the public sector. We also justify our approach by drawing on Wales et al.'s (2020) observation that EO can be implied by the presence of any and all recognized manifestations.

PMO drew on the same items developed by Narver *et al.* (2004), but these items were once again adapted to ensure measurement transferability to the PSO context. For example, in the original eight-item scale, the item 'We work closely with lead users who try to recognize customer needs months or even years before the majority of the market may recognize them', was adapted to read 'We work closely with lead users to recognize external needs months or even years ahead of time'. Moreover, three items from the original battery were excluded because they were too focused on product-level or market-level issues, which were not applicable to the research setting examined here (i.e. 'We innovate even at the risk of making our own products obsolete' / 'We search for opportunities in areas where customers have a difficult time expressing their needs' / 'We extrapolate key trends to gain insight into what users in a current market will need in the future'). Consequently, a five-item scale was used to capture PMO. The two proposed moderators of managers' domain expertise and managers' attitude to risk were captured by items used extensively in the management field. The measurement of expertise comprises three items similar to those used by Vera and Crossan (2005), while managers' attitude to risk was also captured by three well established items from the Jackson Personality Inventory risk-taking sub-scale (Jackson, 1976). Perceptual service performance measurement items were developed by the author team and reflect the

critical elements of cost, competition, and value as presented in recent works in public management (e.g. Osborne *et al.*, 2021).

All items used to measure constructs were gauged on seven-point Likert-type scales. EO dimensions were measured using statements anchored by 'Strongly disagree' (1) to 'Strongly agree' (7). Managers' domain expertise and PMO were measured using statements anchored 'Not at all' (1) to 'Great extent' (7). Managers' attitude to risk used statements anchored 'Not at all' (1) to 'Very often' (7). Service performance measures were anchored 'Very weak' (1) to 'Very strong' (7). To ensure face and content validity, the questionnaire was subjected to review and finally pre-tested with several expert judges consisting of academicians, managers, and field experts. The items we used to capture each construct can be found in Table 1.

Several relevant variables that could explain the dependent variable are controlled for. Measurement items for information processing and organizational memory were adapted from the work of Vera and Crossan (2005). Organization size (as reflected by the number of full-time employees) and job tenure (number of years in current position) were also included as control variables in the analysis and standardized through z-score transformation. As these latter two constructs are reflected by single item variables, a reliability score of 0.7 was assumed for these constructs for the purposes of data analysis and the error variance calculated by $(1 - \rho) \cdot \sigma^2$; where ρ is the assumed composite reliability and σ is the standard deviation.

Summated scales were constructed for each construct. All items were subjected to confirmatory factor analysis (CFA) and the results demonstrate acceptable model fit with all relevant fit indices above accepted thresholds (e.g. Bagozzi and Yi, 1988): χ^2 (df) = 1018.89 (493); Root Mean Square Error of Approximation (RMSEA) = .07; Conditional Fit Index (CFI) = .97; Incremental Fit Index (IFI) = .97; Standardized Root Mean Square Residual

(SRMR) = .06. To test for reliability, Cronbach alpha coefficients were calculated for each scale, all of which successfully satisfied the threshold level of reliability with alpha coefficients of 0.70 or greater in each case (Table 2). The same can be said for Composite Reliability as calculated from the CFA results (Bagozzi and Yi, 1988). Regarding validity, all average variance extracted (AVE) valued are above the accepted .50 threshold (Bagozzi and Yi, 1988) except for manager domain expertise at .49. Though this is just outside normal thresholds, its inclusion is warranted as all factor loadings and *t*-values are statistically significant, indicating convergent validity and additional validity analysis for each construct as gauged by item–total correlation analyses revealed all item–total correlation coefficients were found to be acceptably high, in the anticipated direction, and statistically significant ($p \leq .001$). Finally, values for the square root of AVE for each construct exceed correlation values (Table 2) and thus demonstrate discriminant validity.

Though we had sought to attend to problems associated with common method variance in questionnaire design through random arrangement of questions, using reverse-coded items in places, ensuring the survey was short, and so forth, we also analyzed the data for such problems by specifying a single construct CFA to compare with the original CFA results. Manifestations of common method variance ought to produce a model that fits relatively well to the data when a single construct is specified. This, however, is simply not the case as model fit statistics violate accepted thresholds: χ^2 (df) = 2864.54 (528); RMSEA = .14; SRMR = .10.

...Insert Table 1 About Here...

...Insert Table 2 About Here...

Findings

Structural equation modelling (SEM) is conducted to test the hypotheses and is done so using LISREL 8.8 with maximum likelihood estimation. Constructs involved in interaction terms were mean-centered to avoid potential multicollinearity issues, and Ping's (1995) protocols and equations were used to calculate the necessary factor loadings and error variances for the interaction terms. To ensure that the analysis did not exceed acceptable parameter-to-observation ratios, two structural models were specified. SEM Model 1 included all control variables and all direct and moderated paths pertaining to PMO, while SEM Model 2 considered the service performance effects of EO. In both cases, the model fit statistics for both SEM models show acceptable model fit. For SEM Model 1: χ^2 (df) = 667.08 (336); RMSEA = .07; CFI = .97; IFI = .97; SRMR = .06. For SEM Model 2: χ^2 (df) = 840.33 (393); RMSEA = .07; CFI = .97; IFI = .97; SRMR = .06. All results are presented in Table 3.

The results of the data analysis procedure reveal support for Hypotheses 1 and 2 as both PMO ($t = 5.83$; $p \leq .01$) and EO ($t = 4.77$; $p \leq .01$) are strongly significant and positive drivers of service performance. The interaction terms results are mixed, however. Managers' domain expertise has a negative moderation effect on the relationship between EO and service performance ($t = -1.70$; $p \leq .05$) and between PMO and service performance ($t = -1.65$; $p \leq .05$). While the latter result is as predicted in Hypothesis 5, the former, Hypothesis 3, is refuted as a positive relationship was expected. No significant results were found in relation to managers' attitude towards risk. As such, the paths between PMO and service performance, and EO and service performance, are not affected by the managers' degree of attitude towards risk.

...Insert Table 3 About Here...

Additional analysis

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We explore the results for service performance further through an ANOVA analysis of the PSOs. We identify PSOs based on high levels of PMO (‘High PMO’; N = 63) and EO (‘High EO’; N = 64) if their respective values exceed 5. We note that a significant proportion identifiable as having high levels of PMO or EO will also, frequently, have high levels of both. As such, PSOs with both PMO and EO values exceeding 5 are described as ‘High PMO & EO (N = 47)’. The results are displayed in Table 4. It is apparent that PSOs with simultaneously higher levels of both PMO and EO exhibit significantly greater levels of service performance when compared with service providers that excel merely on PMO or EO alone.

...Insert Table 4 About Here...

Discussion

Contributions to theory

The public sector is a significant setting for entrepreneurship research given the critical role played by PSOs in serving the needs of society and in providing economic prosperity (Kearney and Meynhardt, 2016). It is, therefore, unsurprising that entrepreneurship has been deemed a means of stimulating economic growth and social development (Balasubramanian *et al.*, 2020). Nevertheless, research insights into the synergistic roles of entrepreneurship and marketing are significantly lacking in public administration settings, despite the relationship being a cornerstone of extant entrepreneurship research (e.g. Wales *et al.*, 2021). In recognition of this, and following recent developments in the EO literature, the study contributes to the need for new evidence about EO model specificity, as highlighted by Hughes *et al.* (2022). Specifically, by examining a narrowly bounded sample of PSOs in a specific emerging economy setting, the study offers a new understanding of the EO–performance relationship in context, as called for by Wales *et al.* (2020) and Miller (2011).

The study does so in three distinct ways: first, the study examines an integrative model of EO and PMO, with the latter having received limited attention in the entrepreneurship field, in a context-specific setting to reveal a more nuanced understanding of the role EO plays in public administration; second, as documented, the EO–performance relationship has been examined to a great extent yet performance is largely conceptualized in a traditional, for-profit way and, thus, other important outcome variables have been neglected diminishing the observed value that EO might play in different settings; and lastly, entrepreneurship studies in the public sector have questioned the appropriateness of leadership qualities relative to traditional for-profit business managers (e.g. Kraus *et al.*, 2019). With this in mind, we provide new evidence of the managerial conditions that moderate the positive synergies between EO, PMO, and service performance in public administration.

Originating from two different starting points: outside-in and inside-out. PMO positions customers/users as central to all organizational behavior and decision-making (i.e. a true outside-in philosophy). While EO, on the other hand, is a distinct approach with a focus on how an organization supports its internal activities (Morris *et al.*, 2011) indicative of the inside-out philosophy. By integrating EO and PMO, the study addresses the need for simultaneous inside-out and outside-in strategic thinking in the public sector that has often been neglected (e.g. Osborne *et al.*, 2021). This integrative model is critical to understanding how PSOs can make a stronger contribution to society. PSOs require a clear user focus for a sustainable market presence, while, conversely, maximizing the value of existing resources and capabilities (Osborne *et al.*, 2021). Hence, based on the findings, service (and therefore societal) value is an outcome of an integrative outside-in and inside-out strategic approach (e.g. Quach *et al.*, 2020), which can be developed and deployed through the dual-use of EO

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and PMO by PSOs. Together, the two strategic approaches provide the greatest potential for enhanced service performance, as shown in Table 4.

One major characteristic of public sector reform has been the loss of a competent middle core of public service personnel in pursuit of efficiencies and cost control (Glennon *et al.*, 2018). Though there are clear and obvious problems associated with this loss of tacit knowledge and competencies learned over years of service, the loss of some domain expertise may, perversely, be a catalyst for EO and PMO development and execution among PSOs. As revealed by the moderation findings, public managers' domain expertise negatively impacts the positive relationships between EO, PMO and service performance. In recognition that EO and PMO will represent 'new' orientations for the majority of PSOs and their public service personnel, these orientations appear to be inhibited when there is a high prevalence of domain expertise among public managers. That is not to say, however, that such personnel should indeed be lost. Quite the opposite, in fact. What the findings suggest is the need for a mix of personnel (in terms of their tenure, expertise, knowledge, and so forth) to be directly involved in organizational strategizing if EO and PMO are to result in increased service performance.

Implications for PSOs and societal value

The desire to improve public services and deliver greater societal value has a long history of driving public sector reforms. Often labelled as 'modernization' of public services, such reforms have been central to the public administration agendas of many economically developed countries (e.g. US, UK, Australia) (Glennon *et al.*, 2018). Following this same curve of development, public administrations across medium- and low-income economies are engaged in or entering similar reforms to improve public service delivery. The study, thus, presents new insights on where modernization efforts should be focused by revealing EO and PMO as critical approaches to realizing value creation in society.

At a more granular level, the findings reveal that managers' domain expertise can inhibit and constrain the beneficial performance effects of the two strategic approaches. Based on the findings of the study, we urge PSOs to actively encourage the wider participation of personnel in the strategic management of public services, with a focus on realizing the two strategic approaches examined. By increasing the diversity of decision-making teams so various personnel profiles are represented, rather than relying only on the most experienced or on those perceived to have the highest degree of domain expertise, there is a greater possibility of the two orientations materializing within PSOs. Subsequently, enhanced service performance and greater contributions to societal value can be expected. The findings, therefore, provide new evidence linking the management of PSOs to the achievement of external effectiveness and value creation in delivering public services' (Osborne *et al.*, 2021, p. 173), which is a critical contribution to practice. We recognize that research into associations between EO, PMO, and managerial characteristics requires much greater development before further concrete public policy proposals can be put forth. However, this work is a valuable initial contribution.

Limitations and future research

There are several limitations that must be acknowledged. First, we rely on the perceptions of single informants to capture and measure the study variables. While each informant is from a different organization, having multiple informants in the study sample would have allowed for added robustness to the empirical relationships uncovered. Second, given the size of the country setting in which this study is situated, the target population for the sampling frame was in one specific region of Brazil. A comparison of the prevalence of EO and PMO among PSOs from across the different regions of the country would have been an interesting addition, but this was unfortunately beyond the scope of the study. Third, we do not claim

causality in this study. The cross-sectional research design does not permit causality to be established and a longitudinal research design would have enabled more advanced analyses to be conducted. Finally, it was intentional to examine the relationships between study variables in a middle-income economy context, and while we are confident that the positive significant relationships between the two strategic approaches and service performance will likely hold in other country contexts, some caution in making such claims is advisable.

We identify three avenues for future research. Firstly, much more scholarly research is needed to establish the role that EO and PMO can play in the public sector. Specifically, uncovering whether the value of each is greater (or not) for some public services than others would be a useful advancement of the findings presented here. Second, and similarly, research revealing whether the differential performance effects between PSOs with stronger versus weaker EO and PMO orientations hold across other country contexts is required. Finally, how the two orientations interact with the decision-making characteristics of public managers would be a worthy pursuit. There may be certain combinations of decision-making characteristics that tap more strongly into the different dimensional elements of EO and PMO, for example, risk-taking as a dimension of EO may be closely aligned with managers' improvisation. Such research would afford greater clarity in the guidance afforded to PSOs and, in turn, facilitate greater contributions to society.

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Table 1. Measurement item properties

Construct ^a	Measurement Item	Standardised Factor Loading	t-value
Proactive Market Orientation	We anticipate user/client/customer needs.	.86	15.60
	We continuously try to discover additional needs of our user/clients/customers of which they are unaware.	.93	18.06
	We incorporate solutions to unarticulated user/client/customer needs in our service.	.92	17.66
	We brainstorm on how service users use our service to discover new needs.	.79	13.83
	We work closely with lead users to recognize external needs months or even years ahead of time.	.83	14.94
Entrepreneurial Orientation	We excel at identifying opportunities.	.68	11.16
	We always try to take the initiative in every situation (e.g., in projects and when working with others).	.69	11.34
	People in our organization are encouraged to take calculated risks with new ideas.	.82	14.50
	Our organization emphasises experimentation.	.91	17.19
	Our organization frequently tries out new ideas.	.90	16.77
	Our organization is creative in its methods of operation.	.87	15.83
	We actively introduce improvements and innovations in our organization.	.88	16.37
Managers' Domain Expertise	I am aware of the critical managerial issues that affect my work.	.58	8.20
	I am current and knowledgeable about my field of work.	.80	11.72
	I have knowledge in diverse fields.	.70	10.05
Managers' Attitude to Risk	I enjoy taking risks.	.83	13.54
	Taking risks does not bother me if the potential gains are high.	.77	12.25
	People have told me that I seem to enjoy taking risks.	.79	12.65
Information Processing	Information about what is going on within the organization is readily shared at all levels.	.70	11.45
	We regularly receive information about other departments' activities.	.71	11.60
	We have the necessary information about our external environment.	.79	13.50
	Meetings are often conducted to identify what can be learned and improved upon in our organization.	.82	14.26
	Our organization applies the lessons learned from past decisions to future decisions.	.85	15.02
Organizational Memory	We keep records of past projects.	.65	10.35
	We have information systems to support the work.	.83	14.39
	We have files and databases that are up to date.	.97	18.55
Service Performance	... Service user satisfaction.	.88	16.08
	... Service improvement.	.91	17.26
	... Service value.	.91	17.19
	...Service responsiveness to users.	.76	12.86
	...Accessibility of the service to users.	.71	11.69
	... Increasing service user involvement.	.65	10.51
Organization Size	Number of full-time employees	n/a	n/a
Job Tenure	Length of time in current job position (years)	n/a	n/a

^a All items anchored by 7-point agreement scales.

n/a Not applicable as single item variable

Table 2. Correlation matrix, construct robustness and descriptive statistics

	X1	X2	X3	X4	X5	X6	X7	X8	X9
X1 Proactive Market Orientation	.86 ^a								
X2 Entrepreneurial Orientation	.77**	.83							
X3 Managers' Domain Expertise	.29**	.34**	.70						
X4 Managers' Attitude to Risk	.04	.09	.17*	.80					
X5 Information Processing	.68**	.69**	.33**	.06	.78				
X6 Organizational Memory	.54**	.54**	.30**	-.07	.63**	.83			
X7 Service Performance	.69**	.67**	.26**	.03	.61**	.56**	.81		
X8 Organization Size	-.01	.02	-.04	.16*	-.13	.02	-.03	n/a	
X9 Job Tenure	-.09	-.06	.23**	.09	-.04	.03	-.02	.12	n/a
α	.94	.94	.76	.84	.88	.84	.91	n/a	n/a
CR	.93	.94	.74	.84	.88	.86	.92	n/a	n/a
AVE	.74	.68	.49	.64	.60	.69	.65	n/a	n/a
Mean	4.13	4.19	5.58	3.11	3.79	4.59	4.85	2763.35	5.73
Standard Deviation	1.51	1.45	1.04	1.46	1.45	1.55	1.21	11447.53	5.70

α Cronbach Alpha

CR Composite Reliability

AVE Average Variance Extracted

n/a Not applicable as single item variable

^a Numbers on the diagonals are square root of AVE

** $p \leq .01$, * $p \leq .05$.

Table 3. Structural Equation Modelling Results

Variables	Model 1 (with PMO)		Model 2 (with EO)	
	Standardized path estimate	t-value	Standardized path estimate	t-value
Control Variables				
Managers' Domain Expertise	-.11	-1.15	-.15	-1.43
Managers' Attitude to Risk	.04	.68	.04	.66
Information Processing	.23	2.28*	.19	1.55
Organizational Memory	.16	1.96*	.22	2.46**
Organization Size	-.05	-.74	-.08	-1.11
Job Tenure	.09	1.17	.09	1.14
Direct Effects				
Proactive Market Orientation	.51	5.83**		
Entrepreneurial Orientation			.50	4.77**
Interaction Effects				
PMO × Managers' Domain Expertise	-.11	-1.65*		
EO × Managers' Domain Expertise			-.14	-1.70*
PMO × Managers' Attitude to Risk	.02	.44		
EO × Managers' Attitude to Risk			.05	1.00
Squared Multiple Correlations for Reduced Form		.60		.58

Critical t-values (one-tailed): ** p = .01, critical t-value = 2.326; * p = .05, critical t-value = 1.645.

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Table 4. ANOVA results

	Strategic (Service) Orientation Group			<i>F</i> -value	Tukey test
	Mean (SD)				
	<i>High PMO</i>	<i>High EO</i>	<i>High PMO and High EO</i>		
Service Performance	5.12 (1.03)	5.34 (.68)	6.00 (.58)	11.34**	High PMO < High PMO and High EO** High EO < High PMO and High EO**

** $p \leq .01$.

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"Entrepreneurial Orientation, Proactive Market Orientation and Society: Evidence from Public Service Organizations in Brazil"

We are incredibly grateful for the opportunity to resubmit minor revisions of our paper. Once again, the review team have been extremely supportive and, though only a few points remained to address, we feel these have once again contributed to improving and further refining the quality of our work.

Below we respond to each comment in turn and use italics to highlight new content added to the revised paper. Thank you once again.

Referee: 1

Recommendation: Accept

Comment #1:

Dear authors,

Thank you for addressing all my comments from the previous review round. All my concerns have been resolved and I am satisfied that the paper is now much stronger. I have no more comments to add.

Best wishes,

Your Reviewer

Response: Many thanks for your many constructive comments and guidance throughout this review process. We are delighted you see the value in our paper and your input has certainly elevated the level of our work.

With best wishes,
The Authors

Referee: 2

Recommendation: Minor Revision

Comment #1: Overall improved as researchers have tried to address the previous concerns.

Response: Thank you for your perspective on our efforts and we hope this additional revision to the paper will meet with your satisfaction.

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Comment #2: The first sentence of the intro needs proper recent citations to improve the significance of the issue statement in this research.

Response: We have now cited the work of Bacq et al. (2022) from Journal of Business Venturing in our opening sentence, which fully supports our assertions.

Comment #3: Still paper would need another round of proofreading.

Response: We have taken on board your advice and the work has been thoroughly proofread once again by an external professional. We hope this satisfies your concerns.

We thank you once again for your valuable comments and suggestions and acknowledge that these have led us to substantially improved our work from the original version.

With best wishes,
The Authors