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Internal market orientation adoption and new service development (NSD): Gearing up the internal performance of NSD teams

Introduction

Prior studies have explored the success drivers of a new service after its launch (called 'market-based' or 'external' performance). Early studies examined various organisational factors (De Brentani, 1991, Avlonitis *et al.*, 2001; de Jong and Vermeulen, 2003), whereas later studies evaluated the management of the new service development (NSD) process itself (Stevens and Dimitriadis, 2005) and the extent to which the 'voice of the customer' (Carbonell *et al.*, 2009; Melton and Hartline, 2010; Carbonell and Rodriguez-Escudero, 2014; Karlsson and Skålén, 2015), often captured through that of frontline employees (Santos-Vijande *et al.,* 2016), is present and strong during the NSD process. Papastathopoulou and Hultink (2012) offer a very useful critical review of the pertinent literature along with interesting directions for future research

In addition to how well the company regulates the NSD effort, certain conditions of the company's environment (i.e. competition, reactions to new service launching) can also influence the market performance of the new service. Yet management has only limited, if any, control over such externalities. To increase the chances for success, management can try to improve the NSD team members' ability, for example, to adhere to budgets during the development process or meet the time schedule for development (Storey and Kelly, 2001). Delivering on such factors is important because failing to do so can eventually lead to a higher price for the new service, likely resulting in lower sales revenue or thinner profit margins. This 'internal performance' of the NSD team (or how well the NSD team adhered to the goals set and management expectations) is the focus of prior studies looking into the dynamics that emerge among team members during the NSD process and its consequences for the team's internal performance (Schleimer and Shulman, 2011; Homburg and Kuehnl, 2014). Team dynamics refer to the unconscious psychological forces that influence the direction of a team's behaviour. The functional diversity of team members and the ability to integrate them within the team (Ancona and Caldwell, 1992; Newell *et al.,* 2004), the team's climate (West, 1990; Bain *et al*., 2001), and the ambiguity in defining the roles and tasks within the NSD team (Stetler and Magnusson, 2015) are the three parameters of team dynamics more frequently considered in the pertinent literature.

Unfortunately, the outcome of these studies is equivocal. For example, research reports on the trade-off between the diversity/integration of a group and the group's ability to establish a single homogeneous set of rules and procedures for all members to follow (Jackson *et al.,* 2003). Moreover, ambiguity propels individual team members to become

more creative and consider the different angles associated with the problem at hand (Stetler and Magnusson, 2015). Others studies though report on the negative effect of role ambiguity on the efficiency in delivering a task (Eys and Carron, 2001). Thus, managers face dilemmas on whether they should encourage team integration (Li and Zhang, 2007) or not (Sethi *et al.,* 2001). These are important issues because of their impact on the internal performance of the NSD team.

One potential reason for this ambivalence is the lack of a comprehensive framework to underpin the management of the dynamics within the NSD team and the consequences for the team's internal performance. The members of the NSD team often come from different functions and do not necessarily share the same mindset and priorities (Hitt *et al.*, 2001; Froehle, 2006). In such cases it is necessary to "unlearn" established attitudes, behaviours or procedures and to adopt new ways before coping with the NSD challenges and meeting the management's expectations (Akgun *et al.,* 2006). Team dynamics will facilitate this process of transformation, provided that the management of the dynamics within the NSD team interweave to produce the appropriate background for NSD. Such interweaving though requires that the company has the necessary sensing and transforming routines and capabilities.

Sensing and transforming routines will allow the management to understand what it is that the employees involved in the NSD effort value, while defining tasks and roles within the NSD team in ways that actually deliver this value. This is a key requirement before any employee is motivated to change his/her behaviour and become more and better aligned to the management's expectations (Berry, 1981; Lings, 2004). Also, the management need to establish seizing routines and capabilities that will precipitate a clear understanding of what the management expects from the team, the obstacles the team members face in delivering this and how the management and the NSD team can, collaboratively, tackle these obstacles. Understanding what is that the employees value, being responsive and defining jobs so that employees receive the value they expect, while encouraging and promoting bi-lateral vertical and horizontal internal communication, are the three pillars of internal market orientation (Gounaris, 2006). Developing these pillars *(hence adopting an internal market orientation - IMO)* will allow the company to establish these sensing, transforming and seizing routines, and foster the background required for managing the NSD team dynamics to facilitate the internal performance of the NSD team members. By implication then, IMO stands as a significant dynamic capability (Teece *et al.*, 1997) that carries the potential to gear up the internal performance of the NSD team; something that the pertinent literature in the past has never considered.

A second reason for this ambivalence possibly lies with the design prior studies have used. Because management assesses the internal performance of the NSD team, studies have relied on the key informant approach to generate the necessary data, including data pertaining to the team's dynamics. To capture the dynamics within the NSD team itself, however, studies should instead ask the team members, as they are in a better position to report on these. A different research design that captures data generated simultaneously at the macro- (managers) and micro- (NSD team members) levels of analysis is warranted. Such a design reflects a 'meso-theory framework', which refers to analyses that are specifically designed to reveal connections between the macro- and micro-levels (House *et al.*, 1995).

Thus, the current study aims to contribute to extant NSD literature on the internal performance of the NSD team and to help generate a fresher and clearer picture. To do so, we draw from the resource-based view theory (Barney, 1991), to include the capabilities of the firm (Grant, 1996) that companies use to transform existing resources into a competitive advantage (Teece *et al.*, 1997). This allows us to build a theoretical case for IMO as a key transformative dynamic capability. Drawing from the pertinent literature, this study builds the case for IMO adoption as a tool for organisational change and innovation. We explain that IMO adoption, at the organisational level, facilitates the shifting of employees' mindset and opens the door to more customer-centric behaviours by developing and delivering a job proposition that specific employee segments will value (Gounaris, 2006). In the case of NSD teams, aspects of this value proposition entail shaping the dynamics within the team that will enable the team as a whole to deliver the project and meet management's expectations. As a result of IMO adoption, the NSD team members will draw further value from the horizontal and vertical channels of communication that emerge when the company adopts IMO, because the frequency and formality with which such intelligence is disseminated has a direct effect on its use (Maltz and Kohli, 1996) and, subsequently, the team's ability to align the outcome of its endeavour with the company's marketing strategy. To test this theoretical case, we employ a meso-theory approach and conduct a hierarchical study to account for both the views of team managers (to capture the degree of IMO adoption and the NSD team internal performance at the macro-level) and the individual members of the NSD team (to garner team members' perceptions at the micro-level).

The results from this study contribute to informing different streams of the literature. The first contribution is to the NSD literature. After establishing the adoption of IMO as a dynamic capability and a nomological antecedent to NSD team's internal performance, we theoretically explain and empirically demonstrate the nature of the effect of the

dynamics of the NSD team on the team's internal performance. This allows us to define the capabilities and mechanism that can help the NSD team deliver the new service in a manner that meets management's expectations.

The second major contribution is to the internal marketing literature and comes from exploring the role of IMO adoption in managing and shaping the dynamics within the NSD team. In the past, internal marketing has been misconceived as a communication-based set of activities intended to manipulate the mindset of frontline employees and make them more caring of customers' needs and the company's brand. Since then, much has changed. As our findings show, when contemporary views of IMO are adopted, the performance of non-frontline employees will improve through micro-management practices. This is important because it (1) empirically demonstrates that IMO adoption is relevant for all service employees, not just for those on the front lines, and (2) makes a strong case of the need to bridge the functions of human resources management (HRM) and marketing to the benefit of the entire service organisation. We also extend the vibrant research that has attempted to explore the scope of practicing IMO as well as the implications for NSD (Ahmed and Rafiq, 2003; Gounaris *et al.*, 2010; Sanchez-Hernandez and Miranda, 2011; Fang *et al.*, 2014). The third major contribution comes from the study's practical implications. The study offers compelling evidence on how to manage team dynamics to improve the performance of the NSD team. The study also shows the significance of adopting IMO to develop the NSD team's performance through the management of its dynamics.

Literature review and research hypotheses

NSD and the management of the NSD team

A review of the most influential (ranked as ABS 3* or better) and relevant marketing journals shows that in the last 13 years, only 16 articles have been published in relation to NSD (e.g. Melton and Hartline, 2010; 2013; Papastathopoulou and Hultink, 2012; Santos-Vijande *et al.,* 2016); in comparison, in the same period, the growth of studies on new product development was substantial, with 18 articles published in the Journal of Marketing alone. Arguably, a reason for this could be that there are no significant differences in the management of a new product and a new service. However, as various studies have shown, this is unlikely to be a valid argument (Tatikonda and Zeithaml, 2001; Nijssen *et al.*, 2006; Schleimer and Shulman, 2011). Over the years, researchers have focused on how to improve the outcome of the NSD effort (De Brentani, 1991; Avlonitis *et al.*, 2001; de Jong and Vermeulen, 2003). Other studies have also reported on the impact of the management of the NSD process on NSD performance (Stevens and Dimitriadis, 2005), the contribution of frontline personnel's views and experience (Melton and Hartline, 2010;

Santos-Vijande *et al.*, 2016), and the importance of listening to the customer voice in securing NSD success (Alam and Perry, 2002; Carbonell *et al.*, 2009; Karlsson and Skålén, 2015). As a result, a robust and rather consistent body of literature has emerged.

A different stream of research though has investigated the management of the NSD team itself from a micro-level perspective. To develop and deliver innovations, organisations may rely on either ad-hoc or permanent NSD teams. In either case, the team members will usually come from different functions (Patti and Gilbert, 1997), with different members leading on a different task of the project. Managing such teams can be challenging. Confrontations and conflicts stemming from different views or priorities of different functions can lead to poor team performance (Homburg and Kuehnl, 2014). Thus, management of the dynamics emerging during the NSD development effort is an important antecedent to the team's ability to successfully deliver the project (Schleimer and Shulman, 2011).

Grounded on the theory of social facilitation (Zajonc, 1965), team dynamics represent the system of behaviours and psychological processes occurring within a single group (intragroup dynamics) or between groups (intergroup dynamics) that influence the direction and the decision making of a team's behaviour (Hackman and Hackman, 2002; Forsyth, 2006). The innovation literature has treated intragroup dynamics, for example, as antecedents to the creativity and innovativeness of the team (Stetler and Magnusson, 2015). Studies have explored factors such as the climate within the team or the ambiguity in defining a task to explain the team's performance based on its dynamics (West, 1990; Bain *et al.*, 2001).

Results though are rather equivocal. For example, confusion exists over the importance of the NSD team climate and its components. The prevalent view is that the NSD team climate is critical in determining the outcome of the team's effort (Froehle *et al.*, 2000). Indeed, some studies report that a climate that fosters creativity through tolerance of the experimentation with and development of new ideas can fuel the performance of the NSD team (Daspit *et al.*, 2013; Storey *et al.*, 2016). By contrast, others find that climate is less important in predicting the outcome of the NSD team's effort (Bain *et al.*, 2001), and still others show that a climate characterised by rudimentary documentation and insufficient control over how team members function during the NSD project is detrimental to the team's performance (Edvardsson *et al.*, 1995). Though contrary to 'common wisdom', such findings echo the concerns raised about the significance of 'being creative' versus 'being meaningful' during the NSD effort (Im and Workman, 2004). Likewise, there is equivocation over the effect of role clarity (or ambiguity) on the NSD team's performance. While some degree of role ambiguity is positive in propelling the creativity of individual team members (Stetler and Magnusson, 2015),

ambiguity is also detrimental to the efficiency of delivering a task, particularly in terms of time and monetary resources (Eys and Carron, 2001).

Another factor on which the literature remains inconclusive is team integration, in which employees are brought from different organisational functions into a cohesive whole with the objective to deliver a new service. Because such teams are often cross-functional, integration is important (Troy *et al.*, 2008). However, team integration is also associated with both a positive and a negative impact on the team's output. In line with findings from social psychology (Katz, 1982), the performance of the NSD team benefits from increasing the integration among team members (Laursen and Foss, 2003; Li and Zhang, 2007). Conversely, drawing from the cultural diversity literature (Cox *et al.*, 1991), sustaining diversity among team members is beneficial because this allows them to consider the NSD project from different perspectives, which in turn enables the team as a whole to perform better in developing and delivering the new service (Froehle *et al.*, 2000; Sethi *et al.*, 2001).

In summary, the review of the NSD literature reveals both macro- (organisational-) level (e.g. administration of the process itself, incorporation of customers' voice in the process) and micro- (team-) level (e.g. management of team dynamics) antecedents to the NSD performance. At the macro-level, a strong consensus exists on the key parameters of success, while at the micro-level, empirical investigation has failed to produce an equally robust and unequivocal view of the management of NSD team dynamics. Consequently, the findings from this research stream are less relevant to the management of the service organisation. To tackle this and improve the relevance of this latter stream of research, in the next section, we draw from the resource-based view and the dynamic capabilities of the firm theories as well as the IMO research paradigm.

Transformative management of human resources and IMO

The resource-based view explains how and why certain organisations succeed while others fail (Barney, 1991). Successful organisations have access to resources that competitors do not and cannot imitate. Companies develop appropriate strategies to build on these resources and develop a competitive advantage. However, to benefit from such resources, they also need to develop specific capabilities to recombine and deploy these resources (Wang and Ahmed, 2007).

Different types of capabilities reside at the various levels of the organisation (Nasution and Mavondo, 2008). Of the different capabilities the literature reports, dynamic capabilities are of interest in this study because they enable companies to integrate, reconfigure, and recreate resources so that they can deliver novel market offerings pertinent to

corporate strategic objectives (Wang and Ahmed, 2007; Ambrosini and Bowman, 2009). Dynamic capabilities relate to three specific company abilities: (1) identifying and assessing an opportunity (sensing capabilities), (2) mobilising resources to address an opportunity and capturing value from doing so (seizing capabilities), and (3) ensuring continued renewal (transforming capabilities) (Pavlou and El Sawy, 2011; Helfat and Peteraf, 2015). Dynamic capabilities facilitate the ongoing reconfiguration of different resources into successful generation of new offerings (Melton and Hartline, 2013; Fang *et al.*, 2014).

Of the various resources a service organisation has, human resources are essential. Despite emerging technologies (e.g. artificial intelligence), the talents, skills, and creativity of employees remain important in shaping the company's ability to generate value for the customer, especially in the service context (Nasution and Mavondo, 2008). Likewise, success in delivering a new service is also a function of the NSD team's ability to use both effectively and efficiently (Froehle and Roth, 2007) the resources and support the company makes available for NSD (De Brentani, 1991; Jaw *et al.*, 2010).

Not every member of the NSD team is equally aware of all the conditions underlying success in NSD (Hitt *et al.*, 2001), possibly because of a lack of direct interaction with customers (Froehle, 2006; Troy *et al.*, 2008). Thus, to successfully manage the NSD team, the company needs to develop and employ specific dynamic capabilities to re-create and consolidate the behaviour of team members in such a way that the team's efforts are better aligned with the company's objectives for the new service (Helfat and Winter, 2011; Janssen *et al.*, 2016). However, the NSD literature lacks empirical evidence of what dynamic capabilities a company exactly needs for this task (den Hertog *et al.*, 2010; Kindström *et al.*, 2013; Janssen *et al.*, 2016). To fill this void, we introduce IMO adoption as an appropriate set of dynamic capabilities (den Hertog *et al.*, 2010; Boukis, 2013; Melton and Hartline, 2013).

The practice of internal marketing goes back to the early 1980s. Originally, it pertained mainly to frontline personnel because of their impact on customer experience (Berry, 1981). However, over the years, this instrumental view has evolved significantly (for a detailed discussion, see Gounaris, 2006). As a result, the prevalent view is now that internal marketing is part of an organisational transformation process that enables the company to generate value for (all) employees, while ensuring that employees' competencies and performance align with its market and customer service objectives (Gounaris *et al.*, 2010; Boukis, 2013). Notably, this view has been tested and validated only for frontline employees. So far, the claim for non-frontline employees lacks empirical validation.

In comparison with modern human resources practices (Laursen and Foss, 2003), the practice of internal marketing and the adoption of IMO maintain a perspective that centres on the end-customer of the service organisation. In this vein, for example, employee job satisfaction is not an end in itself; rather, it is a means to an end grounded on the principle that before employees care for the customer, they must first be satisfied with their working environment and conditions (Lings, 2004). A working definition for IMO is thus the manifestation of the company's ability to generate value for the employees so that employees genuinely contribute in the company's effort to generate value for the customer (Gounaris, 2006).

The adoption and practice of IMO represent a deliberate decision at the organisational level to develop and offer an employee value proposition for different employee groups—a proposition that employees will appreciate and find motivating enough to become more engaged in the effort to generate value for customers. Companies that adopt IMO aim to transform the mindset and behaviour of employees and improve the alignment of their practices with the company's objectives and promises to customers (Madhavaram and Hunt, 2008). Hence, the adoption of IMO is a tool for customer-centric organisational change and innovations that deliver specific value to the company's customers, which renders IMO a dynamic capability contributing to the transformation of the organisation (Mieres *et al.*, 2012). On the other hand, the adoption of IMO cannot be a difficult-to-imitate capability (for principles and processes for delivering and adopting IMO, see Gounaris, 2006). Any company with the right intent can launch a plan to increase the degree of IMO adoption.

Three pillars of IMO are responsible for the organisational change IMO adoption brings about. The first involves identifying and collecting intelligence that enables management to understand the needs and expectations of the company's employees (Lings, 2004). This constitutes a sensing routine that helps the service organisation understand and measure opportunities and challenges from the labour environment, both internally and externally. The company also becomes better informed of employees' expectations of employment conditions or payment, which subsequently allows management to shape an employment proposition that the employees will value (Helfat and Peteraf, 2015).

The second pillar is the effort to respond to this intelligence, which allows the organisation to reconfigure its human resources practices so that different employees, with different needs, are appropriately supported in their role and in generating value for the customer, while attaining the most value from their employment. This pillar constitutes a transforming routine that allows the company to better coordinate its human resources and redeploy them more effectively (Gounaris, 2006). The first two pillars allow management to shape a working environment and job

conditions that employees value. In turn, employees become more willing to pursue management's objective regarding the value the company has promised to customers (Gounaris *et al.*, 2010).

The third pillar is the effort to facilitate the bilateral dissemination of internal intelligence across organisational functions and hierarchies so that everyone has a better understanding of the company's customer strategy. This communication carries intelligence about the company's marketing objectives and customers' needs and expectations. Establishing such communication channels allows the company to make this intelligence widely available throughout the organisation. As a result, information flows systematically, employees become more inclined to use it (Maltz and Kohli, 1996). As a result, interfunctional communication improves, which helps reduce silos within the organisation, while allowing employees to develop a clearer understanding of management's key expectations and the company's marketing strategy. Thus, the company develops a shared understanding and collective sense-making of the objectives the company pursues (Lings, 2004; Gounaris, 2006). This third pillar constitutes a seizing routine that enables mobilisation of (human) resources to create a shared understanding of the company's strategic priorities and employees' role in its achievement (Lings, 2004).

A meso-theory research approach and hypotheses

Researchers in management have long recognized that organisational phenomena unfold within complex and dynamic systems (e.g. Katz and Kahn, 1978). Yet the multi-level dynamics of these social systems are frequently ignored (Kozlowski and Klein, 2000). Most management research investigates phenomena by examining them at single levels of analysis (e.g. individual, group/team, organisation, industry, country). Investigation of how to improve organisational performance is a good example of how multi-level research can help scholars better grasp what really drives organisational performance. The macro-approach adopted by strategic management scholars sheds light on the links between the strategies organisations employ and their environments. However, scholarly inquiry has not fully decoded how strategies are formulated within the organisation and how they are implemented (Hitt *et al.*, 2007), which may explain the divergent findings in this area (Hoskisson and Hitt, 1990). Unfortunately, research in the NSD field and on the management of NSD teams is no exception from this pattern of single-level investigation.

The assumption underlying a multi-level approach is that many outcomes of interest are the result of a confluence of influences emanating from different levels of analysis (House *et al.*, 1995). In general, three levels serve to inform scholarly inquiry in social sciences; particularly in economics (Cole, 1968): macro, micro, and meso. Macro-level analyses represent the "global level"; in principle, this level generally traces the outcomes of interactions, such as

economic or other resource transfer interactions, over a large population. The smallest unit of analysis, or the micro-level, is an individual within a social setting. Finally, the meso-level refers to analyses that aim to reveal connections between the micro- and macro-levels (House *et al.*, 1995). In management science specifically, companies from a single sector or various sectors within a single national economy usually represent the macro-level of analysis, and studies across different companies are designed and executed at this level. Regarding the micro-level, a typical level of analysis would be the investigation of the relationship between an individual employee's job satisfaction and his or her propensity to leave the organisation. Finally, a typical example of a meso-level analysis would be the investigation of the impact of a sales manager's practices on salespeople's attitudes or role stress (Avlonitis and Panagopoulos, 2007).

Given the research aim underlying this study, the meso-level approach is clearly the most relevant. A hierarchical research design is necessary to allow collecting data from both the macro- (IMO adoption and internal performance) and the micro- (team dynamics and perceptions) levels. In the following paragraphs, we develop specific hypotheses that connect the particular constructs we investigate with the different levels of analysis (see Figure 1).

<Insert Figure 1 around here>

With regard to the NSD team's performance, a focus on the market-based ("external") performance of the NSD effort dominates the pertinent literature as, for example, the revenue from sales, the market share, and the profitability of the new service are clear key performance indicators of the project's success. However, these indicators are also subject to multiple parameters the service organisation cannot control (e.g. competitors' reaction to the launch of the new service). By contrast, a parameter the company can control is the performance of the NSD team in managing and delivering the NSD project, or the internal performance of the NSD effort. Internal performance reflects the team's ability, in the eyes of the management, to efficiently and effectively use the resources management has made available to deliver the project in a manner that meets expectations (Storey and Kelly, 2001). In examining the market performance of the new service, research has identified the same components of the NSD team's internal performance as significant ingredients for success (De Brentani, 1991; Avlonitis *et al.*, 2001; de Jong and Vermeulen, 2003), which attests to their impact on the market-based performance of the new service.

Assessing the internal performance of the NSD team is a task for management. Significant evidence details what drives the NSD team's internal performance, including the qualities of individual members in terms of creativity or

learning competencies (De Brentani, 1991; Limpibunterng and Johri, 2009; Yang *et al.*, 2016). However, little emphasis has been given to resource-related issues at the NSD team level, which is surprising because resource constraints constitute an essential barrier to successful innovation (Weiss *et al.*, 2017). A slack of resources also results in the sub-optimal use of resources, which again has adverse consequences for the organisation (Schmenner and Swink, 1998; Modi and Mishra, 2011). Striking the right balance and giving the NSD team the kind and amount of resources actually required to complete the project and deliver the new service are two key drivers of the team's internal performance (Perks *et al.*, 2012) that the pertinent literature has yet to empirically test at the team level.

A possible reason for this may be the subjective nature of the problem: what resources are really necessary and how much is required to develop and deliver the new service are not easy to answer, especially when employees' and management's perceptions of what and how much is necessary do not coincide (Patterson *et al.*, 2004, Weiss *et al.*, 2014). To deal with this challenge, we introduce and examine two measures: "perceived resource adequacy" (PRA) and "perceived resource competence" (PRC). PRA captures 'the extent to which the members of the NSD team perceive that key organisational resources like information, personnel, IT equipment or time and money, are sufficiently provided so that the project can be successfully completed (Gounaris *et al.*, 2016). PRC captures the degree to which the NSD team perceives that the organisational resources made available were also suitable, echoing the need for appropriateness (Galunic and Rodan, 1998) and timeliness efficiency (Kogut and Zander, 1996) of resources during the NSD effort. We focus on the team's PRA and PRC because the perception that resources are inadequate or inappropriate is likely to demotivate team members, to the detriment of their ability to innovate (Karina, 2006). By contrast, we expect that the more team members perceive the resources management has made available as being both adequate and appropriate, the higher the chances that the outcome of their efforts will meet the internal performance expectation of management for the NSD project. Thus:

H1. NSD team members' (a) PRA and (b) PRC will positively affect management's assessment of the team's internal NSD performance.

If PRA and PRC drive the NSD team's internal performance, as H1a and H1b suggest, the questions then are how management can influence both PRA and PRC and through what mechanisms. To answer these questions, we turn to the adoption of IMO as a dynamic capability. Prior research has attempted to explore the relationship between NSD success and IMO adoption (Sanchez-Hernandez and Miranda, 2011) but has done so only at the organisational level (macro-level). By doing so, such studies have failed to connect the adoption of IMO with specific managerial

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interventions at the micro-level to explain the mechanisms through which the performance of the NSD team improves as a result of IMO adoption. Indeed, regarding the adoption of IMO as a dynamic capability, extant literature provides theoretical support to explain the (indirect) impact of IMO adoption on both PRA and PRC through the dynamics that emerge within the NSD team and specifically the level of team members' integration, the climate within the team, and the clarity of the roles among team members.

Team integration is important for both PRA and PRC. Resource dependency theory has long established the need for diversity in skills and expertise in addressing tasks that are inherently risky and whose outcome is uncertain (Salancik and Pfeffer, 1978). Developing a new service is a typical example of such tasks; diversity can help team members tackle the task of NSD from different angles (Sethi *et al.*, 2001). At the same time though, evidence points to the opposite direction (Laursen and Foss, 2003; Li and Zhang, 2007), particularly in the effort to innovate (Nakata and Im, 2010). Greater team integration allows the team to better align with the organisation's overall objectives and team members to become more collaborative with one another (Kahn, 1996; García *et al.*, 2008). As a result, the members of highly integrated teams are less inclined to confront one another or enter into disputes. Instead, they enjoy timeliness of communication and share a stronger commitment to the organisation's goals (Franz *et al.*, 2016). Importantly, they become more inclined to readily share resources such as information and intelligence with one another (Smith *et al.*, 2005; García *et al.*, 2008). Their perceptions of both the kind (PRC) and the amount (PRA) of resources they have available for completing and delivering the new service will increase (Lambert and Cooper, 2000; Joshi and Sharma, 2004; Smith and Offodile, 2008; Cronin *et al.*, 2011). For such integration to occur, the organisation must overcome any impediments to integration (e.g. turf, interpretive or communication barriers) (Hutt, 1995).

The adoption of IMO at the organisational level has an impact on the levels of integration the NSD team achieves. IMO adoption provides the narrative around the importance of coordinating efforts to contribute to the company's endeavour to generate value for customers (Gounaris *et al.*, 2010). It also helps overcome departmental/functional silos and groupthink through the dissemination of market intelligence across all internal stakeholders (Perks, 2000; de Jong and Vermeulen, 2003; Lings, 2004). This *corps d' état* flows throughout the organisation as the level of IMO adoption increases, affecting both individual departments and project teams. Thus:

H2. IMO adoption will have a positive indirect effect on the NSD team's (a) PRA and (b) PRC through improved levels of integration among team members.

The climate within the NSD team is equally important for members' PRA and PRC. Team climate reflects the recurring patterns of behaviour, attitudes, and (importantly) feelings that characterise life in the team as conditioned by individual members' perceptions of policies, practices, and procedures (Anderson *et al.*, 1994). Companies are seldom involved in just a single innovation project; instead, they often engage in multiple ones targeting different customers (Hauser *et al.*, 2006). Therefore, management must demonstrate significant competence in deciding how to allocate resources to support a project (Patanakul, 2013). Even when the company pursues a single project, because resources are scarce, the question for making the best use of the limited company resources inevitably arises. Both the kind and amount of resources an innovation project receives and the timeliness efficiency of making these resources available are important (Kogut and Zander, 1996).

However, even if management's resource allocation decisions are appropriate, employees may still perceive the available resources as limited, as employees and managers do not always share the same views (Liao *et al.*, 2009). Specifically, for the innovation task, the team may waste monetary or time resources and subsequently fail to deliver the project they were assigned for reasons such as lack of creativity, inability to cope with the risk associated with potential failure, or the withholding of resources (e.g. knowledge, ideas) from other team members (Blindenbach-Driessen and Van Den Ende, 2006). Given that their views are a priori likely to diverge from management's views anyway, such conditions will have a further negative effect on their perceptions of the provided resources for the project.

To compensate for this, management needs to ensure that the climate within the NSD team is one that promotes innovation (Engwall and Jerbrant, 2003; Cumusluoglu and Ilsev, 2009; Cooper, 2013). A climate that supports team innovativeness and is tolerant of failures can encourage networking within the team and members' engagement with one another (Chen and Huang, 2007). Members of an NSD team that enjoys such a climate will be in a better position to explore novel or alternative approaches to problem-solving and ways to better deliver their task with what they have on hand (Gilson and Shalley, 2004). In doing so, they will also be more inclined to work together and share tacit knowledge (Maltz and Kohli, 1996; Chen and Huang, 2007), facilitating the flow and availability of resources within the team. As a result, they are less likely to waste resources, and thus their PRA should increase. Likewise, a climate that stimulates exploration and novelty will enable team members to use the resources they have available more creatively and effectively when dealing with the various problems and challenges that arise during the NSD project. As a result, their PRC of the resources they received for the project should also increase.

The adoption of IMO enables the organisation to develop such a climate. Because of the clarity of the messages communicated across the organisation as a result of IMO adoption, job roles entail a great deal of autonomy and empowerment for employees (Rafiq and Ahmed, 2000). As a result, employee initiatives and creativity are welcomed, facilitated, and actually encouraged. At the same time, the practice of marketing internally and the adoption of IMO promote a climate of trust and tolerance (Ballantyne, 2003), both key ingredients of a climate supportive of innovation. Moreover, through the communication channels that emerge and the intelligence these channels make available for employees, organisational learning (De Bussy *et al.*, 2003) overall improves, which in turn contributes further to creating a climate for innovation (Slater and Narver, 1995). Such a climate will inevitably flow from the organisational level to that of the NSD team. Thus:

H3. IMO adoption will have a positive indirect effect on the NSD team's (a) PRA and (b) PRC through the improved and innovative climate within the team.

Reducing role ambiguity among NSD team members is another goal for management in shaping the right dynamics within the team. As both PRA and PRC suggest, the amount and kind of resources required to complete a task are a highly subjective matter. Management's perceptions will not necessarily coincide with those of the NSD team members. This discrepancy in views is likely to increase under conditions of high role ambiguity, as team members are likely to invest a greater deal of cognitive resources in seeking role clarification and reconciling conflicting demands instead of focusing on the task at hand (Onyemah, 2008). As a result, their PRA and PRC may be skewed, because the more ambiguous the definition of the task is, the more likely team members will meander in different directions, given unclear, possibly even conflicting goals. The outcome of this drifting is the wasting of resources, which in turn will contract the team members' PRA (Kuvaas 2008; Weiss *et al.*, 2014). PRC will also suffer, as the lack of clearly defined goals and expectations will render the available resources more appropriate for some but not all the objectives the team will decide to pursue (Brettel *et al.*, 2011).

Companies that adopt IMO are in a better position to reduce role ambiguity among NSD team members. Members' role perceptions are mainly shaped by the information they receive from the broader context in which the team functions as well as from the information they collect from management (Mueller and Lee, 2002). IMO adoption vests this information with a company-wide theme (e.g. the need to generate value for the customer) that cuts across functions (Lings, 2004). Importantly, as a result of IMO adoption, this communication becomes more systematic through bilateral channels that connect supervisors with their supervisees and allow them to share what the company

expects regarding customer value (Lings, 2004; Gounaris, 2006). Moreover, the horizontal communication channels that develop among supervisors across the organisation (Lings, 2004, Gounaris, 2006) further enhance the effectiveness and use (Maltz and Kohli, 1996) of the vertically shared information, thus reducing ambiguity among team members. Importantly, as this intelligence works to better define and shape job descriptions, policies, and role expectations (Lings, 2004), these in turn become clearer and more relevant to the company's marketing and customer service strategy (Gounaris *et al.*, 2010). Thus:

H4. IMO adoption will have a positive effect on the NSD team's (a) PRA and (b) PRC through the (indirect) effect resulting from reduced ambiguity within the team.

Methodology

Respondents and procedure

To develop the hierarchical design for this study, company data came from several service sectors (i.e. advertising, financial, insurance, consulting, IT services, and telecommunications providers). In selecting these sectors, we tried to ensure as best possible that a company's offering was less dependent on tangible goods accompanying the service (e.g. the hotel sector). We were mindful of specific requirements, such as separating the predictor from the criterion variables, securing respondent anonymity, reducing evaluation apprehension, and using improved scale items (when possible), that research reports as necessary precautions to prevent bias coming from common method variance (CMV; Podsakoff *et al.*, 2003).

Eligible respondents needed to meet specific eligibility criteria. First, participating organisations had to be of a minimum size so that a good comparison between team managers and members (1:5) would be possible. Thus, a minimum requirement of 50 employees was set. Second, participating organisations needed to have a minimum of revenue from annual sales, as relatively smaller organisations are rather unlikely to have formal NSD procedures and/or formal internal marketing programs (Hoffman *et al.*, 1998). Third, project managers needed to have completed at least one NSD project during the past 12 months using an interfunctional team. We posted 1082 short questionnaires to service organisations that met the first two criteria (size and sales), asking them three simple questions: if they had developed a new service during the last 12 months using interfunctional development teams, who the manager responsible for the NSD project was, and if they were willing to participate in a larger study. Of the 1082 questionnaires

sent, 752 companies replied, but only 606 were eligible. Of these companies, 118 finally agreed to participate and identified their NSD project manager.

The nominated NSD project managers were contacted through mail, and along with the questionnaire, they also received a cover letter defining the NSD process, the goals of the investigation, and how they were identified. Each project manager was invited to indicate only one NSD project that met the specified criteria, but the selection was at their discretion. Project managers were first requested to complete and return a questionnaire for the selected project, and after about a week they received the survey pack. This package included 10 questionnaires and an invitation to distribute the questionnaires among all the members of the team they managed during the project. Individual response envelopes were also provided to ensure anonymity of responses, while allowing us to match the (anonymous) replies to the specific organisation and manager. Participating managers were also asked not to contact employees who had participated in the project but had since left the company, to avoid bias in responses stemming from the reasons for leaving the company. In total, 116 managers and 543 NSD team members participated, with an average team size of 5.68 participants. Each team was formally arranged for the purpose of developing/designing a specific new service of interest (single project) for the company. Participating team members had been selected to join the team ad hoc and the team was time bounded (until the objectives previously set for this project were met). As such, a specific amount of their working time was allocated to the NSD project. The duration of the projects we studied ranged from 19 weeks to 15 months, with team meetings in most cases ranging from once or twice per week to few times per month. Appendix A, Table A1, presents the respondents' demographic profile.

Measures

Following the meso-theory approach adopted in this study, we assessed IMO and internal performance at the company (macro-) level as reported by the NSD managers. To measure IMO, we back-translated the original items adopted from Gounaris (2006) in English (from Greek) and followed exactly the same process to calculate the company's overall degree of IMO adoption. Specifically, following Gounaris (2006, 2008) principal procedures, IMO is calculated as a derived higher-order construct resulting from first-order constructs (that the actual items in the questionnaire capture) that reflect the three key dimensions of collecting internal-market intelligence, disseminating this intelligence and responding to this internal intelligence. More details of the procedure and the tests we used to ensure the quality of the measure appear in Appendices A and B.

We assessed NSD teams' internal performance using a four-item measure from Storey and Kelly (2001) and Matear *et al.* (2004), to capture both management's expectations of the NSD team and the team's performance against these expectations, an approach established in the services literature for assessing performance (Cronin and Taylor, 1994).

Moreover, we considered two control variables (i.e. company size and project innovativeness) at the macro-level when assessing the internal performance of the NSD team because they can condition the outcome of the NSD effort (Hitt *et al.*, 1997; Santos-Vijande and Álvarez-González, 2007). For example, NSD teams in smaller companies are more likely to have fewer resources available for the NSD project than teams in larger companies. NSD team managers were asked to indicate the number of company employees, while project innovativeness was measured with a single-item question (1 = 'low', 6 = 'high').

The NSD team members reported on the remaining measures (micro-level). We assessed role ambiguity directly using the Rizzo et al.'s (1970) six-item scale. To determine the climate within the NSD team, items were drawn from Joshi and Sharma (2004) and Anderson and West (1998). Again, we employed a direct approach in measurement, as we did not foresee any reason for using an indirect approach. Cross-functional integration measure is based on De Luca and Atuahene-Gima's (2007) study. The measure is designed to assess the degree of integration between the different functions of the organisation, of which the level of integration among team members from various functions is often a reflection (Nakata and Im, 2010). This indirect approach in assessing the degree of integration helps overcome the potential reluctance of respondents to provide a true and accurate assessment of the real degree of integration within the team (Fisher and To, 2012). Finally, PRA and PRC are newly developed scales. To obtain the new measures, we first ran 12 in-depth interviews with employees and managers who had experience in NSD and agreed to act as raters in helping with the object and attributes classification for the new scales (Rossiter, 2002). Then, we relied on the steps Churchill (1979) suggests and tested the initial pool of 22 items against a purposive sample (different from that used for the main study) comprising 150 employees and managers with experience in NSD. The outcome of the purification and validation process resulted in 10 items, five measuring PRA and five PRC (the latter consisted of items worded in reverse; see Appendix A, Tables A2 and A3, for all the measures in the study).

Measurement model, data analysis, and results

With our measures always estimated as reflective (Cadogan and Lee, 2013), we proceeded in stages. We began by testing the validity of the measures. As expected, IMO best fits as a second-order latent construct consisting of six first-

order factors (see Appendix A for further details). We then validated the factorial structure of all our constructs using all 52 items included in the study.

Table 1 provides the correlation matrix for the latent variables. We centred the item scores for our constructs and formed composite scores using confirmatory factor analysis–based loadings. We identified endogeneity and formed a correction product (VhX) (see Appendix B for details). We worked to prevent common method variance at the design stage (as the design involved collecting information from managers for the antecedent and the dependent variable and NSD team members for the intervening variables) but also tested for it at the analytical stage (see Appendix B). The results revealed minimal contamination, so we proceeded with the analysis.

<Insert Table 1 about here>

We subsequently tested whether the use of a multi-level model would fit the data. The interclass correlation coefficient (ICC) estimates in all six models were substantial, and with one exception (at 0.17), ICC estimates ranged between 0.71 and 0.80. This confirms the requirement for multi-level analysis. Our models are specified as follows:

(1) $Pij = b_{0p} + \mu_{0p} + b_1 PRA_{ij} + \mu_1 PRA_{ij} + b_2 PRC_{ij} + \mu_2 PRC_{ij} + b_3 Size_j + b_4 Innovation_j + ep_{ij};$

(2) $PRAij = b_{0pra} + \mu_{0pra} + b_5 TC_{ij} + \mu_5 TC_{ij} + b_6 RA_{ij} + \mu_6 RA_{ij} + b_7 I_{ij} + \mu_7 I_{ij} + b_8 Size_j + b_9 Innovation_j + epra_{ij};$

(3) $PRCij = b_{0prc} + \mu_{0prc} + b_{10} TC_{ij} + \mu_{10} TC_{ij} + b_{11} RA_{ij} + \mu_{11} RA_{ij} + b_{12} I_{ij} + \mu_{12} I_{ij} + b_{13} Size_j + b_{14} Innovation_j + eprc_{ij};$

(4) $TCij = b_{0tc} + \mu_{0tc} + b_{15} IMO_j + \mu_{15} IMO_j + b_{16} VhX_j + b_{17} Size_j + b_{18} Innovation_j + etc_{ij};$

(5) $RAij = b_{0ra} + \mu_{0ra} + b_{19} IMO_j + \mu_{19} IMO_j + b_{20} VhX_j + b_{21} Size_j + b_{22} Innovation_j + era_{ij};$ and

(6) $TIij = b_{0i} + \mu_{0i} + b_{23} IMO_j + \mu_{23} IMO_j + b_{24} VhX_j + b_{25} Size_j + b_{26} Innovation_j + ei_{ij},$

whereby i denotes members of the NSD team and j denotes the firm project. Size and innovation are Level-2 (project level) control covariates; IMO is a Level-2 antecedent; and VhX is the endogeneity correction term for the influence of IMO on role ambiguity (RA), team climate (TC) and team integration (TI).

To test our hypotheses, we opted for Stata's 'mixed' function and individual multi-level regressions, as they suit the nature of our dataset, the nature of our constructs, our observations/variables, and our purposes. The selected function allows for random effects, uses a maximum likelihood estimation based on robust variance–covariance matrices, and allows for the random intercepts (i.e. the constant for each company) and coefficients to covary with each other (as it does not assume zero correlation between them). We also employed the expectation–maximization

iteration algorithm (vs. gradient-based methods) during the estimation (i.e. we used the additional command "emonly").

<Insert Table 2 about here>

H1a and H1b (respectively) suggest that PRA and PRC will positively affect the internal performance of the NSD team, assessed at the company (macro-) level. As the results in Table 2 show, this hypothesis is fully supported, as the effects of both PRA and PRC on internal performance are significant, though PRA's effect is stronger (B=0.40, $p<0.001$) than PRC's (B=0.11, $p<0.05$). Likewise, H2a and H2b indicate that the adoption of IMO will have a positive effect on the NSD team's integration and, through this, will boost team members' PRA and PRC, respectively. From Table 2 again, the effect of IMO adoption on integration is positive and significant (B=1.72, $p<0.001$), while the degree of integration is also a significant antecedent for both PRA (B=0.11, $p<0.01$) and PRC (B=0.19, $p<0.001$), in support of H2a and H2b. The same applies for H3a and H3b, which suggest that the adoption of IMO will have a positive effect on PRA and PRC by helping shape a climate within the team that is both supportive of innovativeness and tolerant of failure. The results from a Sobel test (see Figure 2) also confirm H2a, H2b, H3a, and H3b. H4 is only partially supported however this hypothesis tests the effect of the adoption of IMO on PRA (H4a) and PRC (H4b) through the reduction of role ambiguity, but the indirect effect is significant only for the link among IMO, role ambiguity, and PRA (H4a), leading to the rejection of H4b.

<Insert Figure 2 about here>

Discussion

Table 3 summarises the results from the data analysis regarding the hypotheses. Although the extant literature on the drivers of NSD performance is well established, the specific mechanisms required to improve the success of innovation efforts remain only vaguely explained (Hotho and Champion, 2011), as this question has attracted limited attention. Moreover, with the level of the analysis remaining at the (macro-) organisational level, results are rather equivocal. The handful of studies examining the management of the NSD effort in relation to the NSD team have focused mainly on the dynamics arising within the team during the NSD (Schleimer and Shulman, 2011; Homburg and Kuehnl, 2014). The single level of analysis and the key informant approach prior studies have employed do not well serve the purpose of understanding the mechanisms associated with the management of the NSD team and how to improve its performance (Sanchez-Hernandez and Miranda, 2011; Mieres *et al.*, 2012; Fang *et al.*, 2014)

To overcome this, we developed and empirically tested a theoretical framework using a meso-theory approach accommodating data from both the organisational (macro-) and the NSD team (micro-) levels. In doing so, we focused on the internal performance of the NSD team (macro-level) because this can significantly contribute to the performance of the new service (De Brentani, 1991; Avlonitis *et al.*, 2001; de Jong and Vermeulen, 2003). To explain the internal performance of the NSD team, we relied on the resource-based view and strived to explain internal performance from a resource perspective. We investigated PRA and PRC because any attempt to objectively assess the effectiveness or efficiency of resource allocation from the perspective of NSD team members is likely to be subject to respondent bias, which is impossible to control for or assess. In line with extant literature, we then aimed to understand the impact of the dynamics within the NSD team on PRA and PRC and to unveil the mechanism through which the company can improve the performance of NSD. Moreover, we examined the role of IMO adoption as a dynamic capability in shaping NSD team dynamics and subsequently PRA and PRC.

<Insert Table 3 about here >

This study makes three major contributions to theory and practice. First, this study contributes to the NSD literature. The findings show that the NSD team's internal performance is significantly conditioned by members' PRA and PRC. This is an important contribution because, in general, resource-related research in the NSD context remains scarce (Weiss *et al.*, 2017). More important, using a meso-theory approach, this study establishes the link between the NSD team's internal performance, measured at the organisational level, and team members' PRA and PRC. This finding is not subject to the limitations associated with the key informant approach employed in prior studies and is more reliable and relevant. Interestingly though, while both PRA and PRC have a significant impact on internal performance, PRC impact is much weaker (compared to PRA). This is probably because, while the team members focus on the specific project they have in hand, the management is probably looking at the larger challenge of allocating resources across various projects (innovation-specific or not) that the company is pursuing at the same time. As a result, it is mainly the perceived amount of resources and the management's ability to secure the resources the NSD team believes they need to complete the project; besides, the experience both the management and the NSD team members have in developing and delivering a new service, will probably allow both sides to have clearer and less divergent view on the kind of resources the project will require. Hence, the rather weak (albeit significant) effect of PRC on internal performance.

Two implications arise for academics here. On the one hand, there is a need to consider the subjective nature of resource allocation and the perceptions of NSD team members when trying to explain the outcomes of innovation

efforts and especially the internal performance of the NSD team. On the other hand, there is a need to manage these perceptions through specific mechanisms to improve the team's internal performance, which then begs the question of what mechanisms management can use for this purpose.

Adding further to this first major contribution, our findings help answer this latter question, as well as the capabilities a company should develop to manage PRA and PRC to improve the team's internal performance. Regarding the mechanisms, our findings indicate that the team dynamics that emerge during the NSD effort have a significant impact on PRA and, in almost all cases, on PRC. More specifically, both PRA and PRC improve when the climate within the NSD team is positive and supportive of innovation and creativity, especially when combined with higher levels of integration (Edvardsson *et al.*, 1995; Lambert and Cooper, 2000). Role ambiguity reduction also has a positive effect on PRA (though not on PRC), as the clearer the definition of the tasks and the role of each member in the team, the easier it is for members to make the connection between tasks and resources. The impact of reducing role ambiguity on the NSD team's internal performance is also positive (overall), despite the lack of a significant effect on PRC (perhaps because employees and managers with some experience in developing new services are more likely to have a common understanding of the kind of resources required).

Moreover, our findings help resolve the debate over the impact of dynamics within the NSD at least with regard to the team's internal performance. Controversial findings in past studies regarding different elements of the team's dynamics have fuelled this debate. The research design of prior studies has not incorporated both the views of the NSD team members and those of management. The interactions occurring among individual team members and their consequences for the team's internal performance have remained masked. By contrast, our meso-theory approach informs this stream of investigation, leading to more reliable findings. To round up, our study has clearly established that NSD team's dynamics are important antecedents to the team members' perception regarding the kind and amount of resources they have available to deliver the project. Improving these perceptions has a positive effect on the team's internal performance. Hence, our study has provided a clear though indirect path of the positive effect the appropriate management of specific team dynamics can has on the performance of the NSD team. As such, our findings help to address the ambivalence past studies have produced regarding the impact of certain aspects of NSD team dynamics on the outcome of the NSD effort.

The findings also highlight one specific dynamic capability that companies should develop before PRA and PRC can improve management's effort to shape the right dynamics within the NSD team (Mieres *et al.*, 2012), namely, the

adoption of IMO. In line with our theoretical argumentation, we demonstrated that the adoption of IMO is indeed an essential dynamic capability that helps the organisation transform the mindset of employees, while improving their alignment with company objectives. The adoption of IMO provides the entire organisation with an overarching (shared) theme and objective (customer value generation) to guide every internal process (Gounaris *et al.*, 2010). The communication channels that emerge as a result of IMO adoption also help reduce functional silos within the organisation, while building organisation-wide awareness of what customers value and how to deliver this. So, for the innovation effort and the NSD team, the focus on customer value generation helps members build on this shared goal, which in turn allows for a greater degree of integration within the team. Likewise, with an IMO, expectations of roles and tasks become clearer because of the bidirectional communication between managers and employees. For example, both parties will engage in a more constructive and informative dialogue regarding the organisation's objectives for the new service, the roles and expectations of each team member, and the obstacles or challenges the team faces during the NSD effort. Furthermore, because IMO promotes empowerment and participative management (Gounaris, 2008), the climate within the team will eventually become more supportive of novel ideas from team members.

The second major contribution of this study stems from the identification of IMO as a dynamic capability. Internal marketing has continuously evolved, and various studies have demonstrated how and why internal marketing is important (Kadic-Maglajlic, Boso and Micevski, 2018 Meyer *et al.*, 2010; Mieres *et al.*, 2012). However, although research argues that the practice of marketing internally can benefit the organisation as a whole (Lings, 2004; Fang *et al.*, 2014), to date empirical investigations have focused mainly on either the impact of internal marketing and IMO adoption on the performance of frontline employees (Rafiq and Ahmed, 2000; Gounaris, 2008; Korschum *et al.*, 2014) or the performance of the organisation as a whole (Meyer *et al.*, 2010) in a rather abstract way.

By contrast, the current study demonstrates that IMO adoption is a strong and important dynamic capability that allows management to intervene and transform how all employees (not just those on the front line) interact with one another and what the subsequent implications are for their performance in relation to management's expectations. Our findings establish a new link between the adoption of IMO and the management of non-frontline employees, at the micro-level. Adopting IMO helps non-frontline employees improve their performance, as is the case for their colleagues on the front line. This is a significant contribution to the literature on internal marketing and IMO adoption, providing the missing empirical evidence that is necessary before treating the adoption of IMO as a tool to employee attitudinal and behavioural transformation in the pursuit of a more customer-centric organisation. The implication for

marketing academics is the need to explore the interdisciplinary bonds between HRM and marketing. Developing, adopting, and reaping the benefits of IMO clearly require a wider effort that will depend on the involvement of the entire organisation. However, HRM and marketing are clearly the groups that are responsible for championing the adoption of IMO. Although the call for such interdisciplinary exploration is not new, misunderstandings about, and possibly even prejudice towards, the practice of internal marketing may exist between HRM and marketing.

As the third major contribution of this study, our findings indicate that management needs to seriously consider the performance implications of team members' perceptions of the adequacy and appropriateness of the resources they received for NSD. This may call for adopting practices of participative management, which allows team members to contribute especially in the decision to allocate resources to the NSD effort. In turn, they also must work with management in supporting and entrenching the adoption of IMO to ensure the right dynamics will emerge to boost the team's internal performance.

Regarding the adoption of IMO, the burden clearly rests mainly with the company's top managers, who need to promote the adoption of the IMO in the organisation. The pertinent literature explains how this mission can be achieved through a combination of a "programmatic approach" and a "market-back approach" (Gounaris *et al.*, 2010). The programmatic approach is the first stage in the re-orientation effort with an educational and learning nature. At this stage, top management will include actions such as teaching various "principles" to achieve a critical level of understanding of IMO and its scope. During the market-back approach, which is the second stage of IMO adoption process, the organisation adapts its processes, procedures, and structures from actual employee value-creation performance. Assigning people to problem-solving contexts, both current and new, is critical to learning and is the key to reinforcing the transformation the organisation aims to achieve through the adoption of IMO. At the same time, management will also need to address the challenge of bringing HRM and marketing closer, to champion the IMO adoption process. Although further research is clearly necessary, extant literature in organisational behaviour and HRM provides a sufficient first outline of what policies may serve this purpose (Troy *et al.*, 2008; Bowen, 2016). These include setting inter-related and cross-functional objectives, promoting opportunities for cross-functional interaction (both professionally and socially), and systematically coaching managers to ensure that employees in all functions view this integration as part of their job and expected role performance.

Limitations and future research directions

Despite this study's interdisciplinary contributions, two limitations are noteworthy and must be considered. The first comes from the context and focus on NSD teams. While this context served the purpose and scope of our investigation, the context somewhat confines our ability to generalise the impact of IMO adoption (as a dynamic capability) on non-frontline employees or teams facing a task less challenging than NSD. It could be argued that team integration and climate are lesser concerns in such cases. An indirect effect to the performance of such employees through a clearer definition of job descriptions, tasks, and roles may also be possible when creativity is less important in delivering tasks (Kostopoulos *et al.*, 2012). To fully uncover the impact of IMO adoption on the performance of non-frontline employees, research should consider other contexts as well. Likewise, other measures of team performance (e.g. task completion time, knowledge development) require adaptation to capture the performance measures in different contexts and job roles.

The second limitation comes from not addressing managers' personality traits and style of management. Extant literature has recorded the importance of both factors in the management of a team (Somech, 2006; Creasy and Anantatmula, 2013). However, complicating the research model with more variables would make little sense, unless evidence of the impact of IMO adoption is available. With such evidence, research can examine the moderating effect of managers' personality or management style on the relationship between the adoption of IMO and employees' performance. Research in this direction would shed more light on the qualities managers need to have before the company can reap the benefits of IMO adoption.

Another direction for future research is to explore the causality between the development of IMO, as a dynamic capability, and the broader idiosyncratic environment of the organisation. The adoption of IMO is a deliberate decision the organisation makes to invest in building this capability. This decision is taken at a certain time, but at the same time, certain organisational behaviours define the environment of the organisation. Consider, for example, politicking. Defined as the behaviour directed to furthering self- or group interest at the expense of others' well-being, politicking appears to directly oppose the development of IMO as a dynamic capability. Research should address whether such idiosyncratic organisational behaviours deter the development of capabilities such as IMO or if the development of IMO as a dynamic capability affects broader organisational behaviours and environment. Answering such questions would give a more specific and helpful answer to management's question of how the organisation can develop and build a strong IMO.

Future research should also aim to theorise and empirically validate objective measures to assess a company's degree of IMO adoption. We already explained the significance of incorporating IMO in efforts to model the impact of employees on the company's performance. For modelling purposes though, we relied on objective data, but the measure we employed to assess the adoption of IMO is subjective and relies on a survey to record the subjective evaluation of the respondents. Incorporating such a subjective measure in a model that consists of objective (secondary) data is only possible if IMO is to be treated as a dummy variable ("has/has not been developed" or "low/high level of IMO adoption"). However, dummy variables are limited in their ability to describe the impact of a variable on the outcome variable. The process of generating this information is also likely to be reversely disproportionate to the explanatory value a dummy variable will produce. The challenge is to consider how to move from subjective to more objective ways in gauging the degree to which a company has developed IMO. This would be a worthwhile direction for future research.

Finally, research should begin exploring the process of integrating research in HRM and marketing. Although the organisation behaviour literature may provide some general guidelines on the policies and actions required before two functions can be integrated, further research is necessary to contextualise the specific challenges associated with the effort to integrate these particular functions. For example, what, if any, are the main perceptions of HRM managers of their marketing colleagues? How do these perceptions impede the integration of the two functions? What language gaps exist between HRM and marketing that deter them from communicating effectively? What are the most appropriate policies to bridge the (specific) differences between the two functions? Given this study's findings of the importance of integrating the HRM and marketing functions, future research efforts in this direction will help promote academic research and uncover important implications for practitioners.

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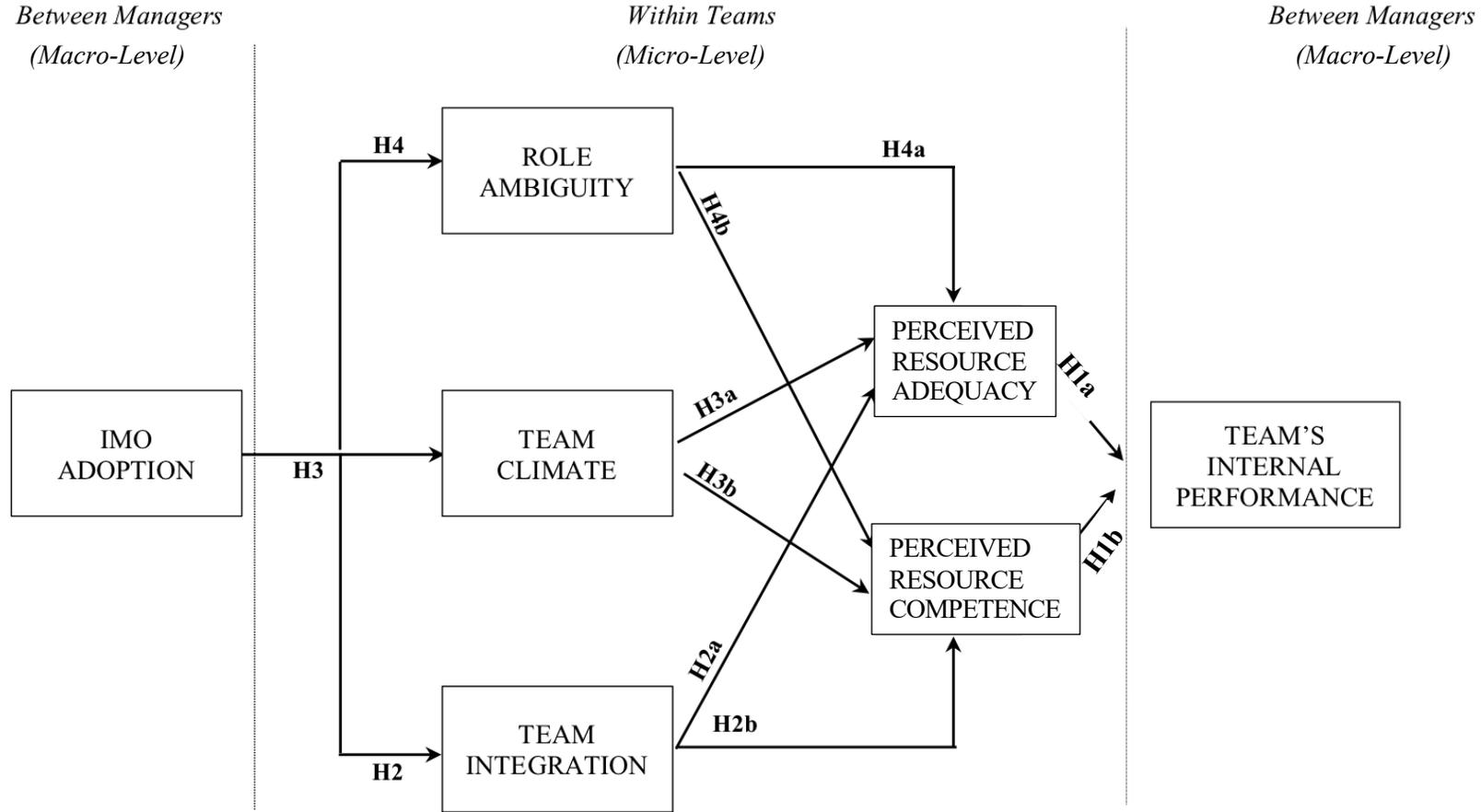
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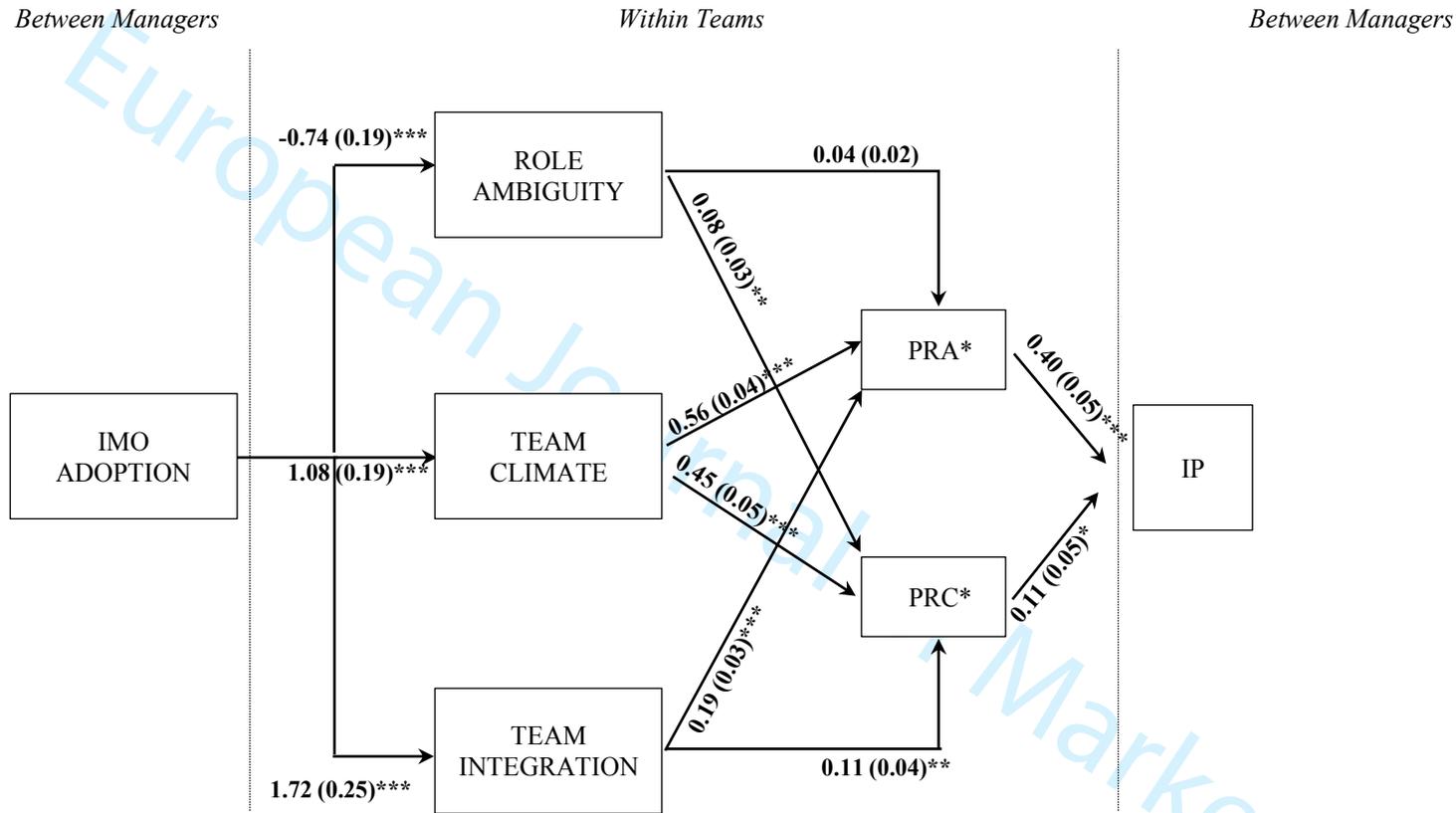
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Figure 1: Research Framework

Between Managers
(Macro-Level)

Within Teams
(Micro-Level)

Between Managers
(Macro-Level)

Figure 2: Results embedded in the Research Framework

Between Managers   *Within Teams*   *Between Managers*

-0.74 (0.19)***

ROLE AMBIGUITY

0.04 (0.02)

0.08 (0.03)***

IMO ADOPTION

1.08 (0.19)***

TEAM CLIMATE

0.56 (0.04)***

PRA*

0.40 (0.05)***

IP

0.45 (0.05)***

0.11 (0.05)*

PRC*

0.19 (0.03)***

1.72 (0.25)***

TEAM INTEGRATION

0.11 (0.04)**

Loadings, standard errors in brackets and level of significance;
*** = significant at 0.001, ** = significant at 0.01 and*
* = significant at 0.05

PRA: Perceived Resource Adequacy
PRC: Perceived Resource Competence
IP: Internal Performance

INDIRECT EFFECTS SIGNIFICANCE (Sobel Test) and Proportion of Mediated Effect

IMO_{RA}–PRC 0.069; z = 3.5, p=0.004; bootstrapped coef s.e.= 0.02; z=2.90, p=0.004; bias=0.000; Mediated Effect =0.071
IMO_{TC}–PRC 0.539; z = 13.7, p=0.000; bootstrapped coef s.e.= 0.04; z=14.3, p=0.000; bias=-0.000; Mediated Effect=0.56
IMO_{TI} –PRC 0.388; z =10.7, p=0.000; bootstrapped coef s.e.= 0.04; z=10.8, p=0.000;bias=-0.000; Mediated Effect=0.40
IMO_{RA}–PRA 0.012; z = 0.65, p=0.51; bootstrapped coef s.e.= 0.02; z=0.68, p=0.49; bias=0.0007; Mediated Effect=0.01
IMO_{TC}–PRA 0.345; z = 9.96, p=0.000; bootstrapped coef s.e.= 0.03; z=10.7, p=0.000;Mediated Effect=0.50
IMO_{TI} –PRA 0.186; z = 5.56, p=0.000; bootstrapped coef s.e.= 0.03; z=5.8, p=0.000; bias=0.000; Mediated Effect=0.27

Table 1: Descriptive Statistics (Raw Scores) and Pairwise Construct Correlations*

Variable	Mean	Std. Dev.	IMO	RA	TC	I	PRA	PRC	IP
IMO	2.84	0.72	1.00						
Role Ambiguity (RA)	3.21	1.05	-0.42	1.00					
Team Climate (TC)	3.54	0.81	0.78	-0.42	1.00				
Integration (I)	4.13	1.16	0.80	-0.35	0.76	1.00			
Perceived Resource Adequacy (PRA)	3.97	1.02	0.78	-0.41	0.95	0.82	1.00		
Perceived Resource Competence (PRC)	2.64	0.92	0.62	-0.24	0.73	0.56	0.63	1.00	
Internal Performance (IP)	3.67	0.83	0.73	-0.47	0.89	0.76	0.86	0.65	1.00
AVE			0.79	0.67	0.63	0.72	0.69	0.61	0.64
SQRT(AVE)			0.89	0.82	0.79	0.85	0.83	0.78	0.80
CR			0.96	0.92	0.87	0.83	0.91	0.89	0.92

* All are significant at $p < .001$

Table 2: Results of Multilevel Analyses –Unstandardized Coefficients (SE)

Dependent: Independent	Model 1 IP	Model 2 PRA	Model 3 PRC	Model 4 RA	Model 5 TC	Model 6 TI
Perceived Resource Adequacy (PRA)	.40*** (.04)					
Perceived Resource Competence (PRC)	.11* (.05)					
Role Ambiguity (RA)		.04 (.02)	.08** (.03)			
Team Climate (TC)		.56*** (.04)	.45*** (.05)			
Team Integration (TI)		.19*** (.03)	.11** (.04)			
IMO (IMO)				-.74*** (.19)	1.08*** (.19)	1.72*** (.25)
Control - Firm Size	.38*** (.10)	.34** (.13)	.50*** (.12)	-.21 (.18)	-.02 (.17)	-.36 (.25)
Control - Project Innovativeness	.06 (.04)	.07 (.05)	-.11* (.05)	-.07 (.05)	.10* (.05)	.15* (.06)
Endogeneity Correction				.38* (.19)	-.70*** (.20)	-.92*** (.26)
Intercept	1.45*** (.13)	0.81*** (.17)	0.18 (.18)	3.37*** (.14)	3.55*** (.14)	4.38*** (.21)
LL	-341.95	-375.04	-472.53	-900.24	-487.78	-686.78
Wald χ^2 (p)	407.88***	523.04***	279.69***	95.57***	117.56***	129.73***

*** $p<0.001$; ** $p<0.01$; * $p<0.05$; Small size ($\leq$ 50 people) is the reference category for Firm Size.

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Table 3: Summary of Hypotheses and Results

H1. NSD team members' **(a)** PRA and **(b)** PRC will positively affect management's assessment of the team's internal NSD IP.	**H1a**	**Accepted**
	H1b	**Accepted**
H2. IMO adoption will have a positive indirect effect on the NSD team's **(a)** PRA and **(b)** PRC through improved levels of integration among team members.	**H2a**	**Accepted**
	H2b	**Accepted**
H3. IMO adoption will have a positive indirect effect on the NSD team's **(a)** PRA and **(b)** PRC through the improved and innovative climate within the team.	**H3a**	**Accepted**
	H3b	**Accepted**
H4. IMO adoption will have a positive effect on the NSD team's **(a)** PRA and **(b)** PRC through the (indirect) effect resulting from reduced ambiguity within the team.	**H4a**	**Accepted**
	H4b	*Rejected*

Appendix A Operationalization of measures and supplementary information

Internal Market Orientation (IMO)

Items for IMO rely on the Gounaris (2006) measure. Following data purification procedures, compared to the ten reported by Gounaris, we ended up with six first order factors, which we used to measure IMO, through the same procedures as Gounaris did (2006). Next, we tested the difference between our derived model for IMO and the original one (Gounaris 2006) in two ways. First, we compared the correlation matrices and we identified a large similarity between the two (averaging a mere 14% difference in correlations between the two correlation matrices for the respective items in both models). Then, based on the Gounaris (2006) correlations matrix, we reverse-engineered the factorial structure, post-hoc rebuilt the Gounaris (2006) model and generated fit indices. We then compared the model indices with the indices of our derived model. The results exhibit a statistically but non-significant difference, namely: $d\chi2$: 16.695; df: 81 between the original Gounaris (2006) model and ours while ours also exhibits much better fit based on RMSEA (.07 versus .15):

	$\chi2$	df	RMSEA	CFI	SRMR
Gounaris (2006)	*472.976*	*32*	*0.15 (CI90% 0.14–0.16; p=0.000)*	*0.88*	*0.53*
This study	*489.671*	*113*	*0.07 (CI 90% 0.065–0.078; p=0.009)*	*0.90*	*0.053*

We thus proceeded and used our derived IMO model in subsequent analysis.

Items and first order factors used to derive the IMO model: ["In our firm …" (7-point Likert scale 'strongly agree-strongly disagree')]

Exchange of Value (EX): EX1: Supervisors meet regularly with subordinates so that employees have the chance to say what they expect from the company; EX2: Assessing employees' job satisfaction is an important task for supervisors; EX3: This company emphasizes on understanding employee needs. **Employee-Manager Communication (EM)**: EM1: Before any policy change supervisors inform their subordinates face to face in advance; EM2: Supervisors sincerely listen to the problems employees have doing their job; EM3: Supervisors are always concerned about personal problems that may affect employee performance **Aware of labor Market Conditions (MC)**: MC1: This company is informed about legal development in the labor market; MC2: We closely monitor employment level in our industry and new job opportunities that arise. **Remuneration**: RE1: When an employee does something extraordinary, (s)he will receive some financial bonus/reward; RE2: Individual income and the annual increases are very closely tied to qualification and performance; RE3: My income and the annual increases are much related to those of people with similar qualifications working in this or any other industry. **Job Description (JB)**: JB1: My job description allows me to satisfy my personal needs and goals through my work; JB2: The tasks supervisors assign help employees to advance their career with this company; JB3: Supervisors always justify job description and the tasks they assign to more senior levels of management. **Internal Segment Targeting (TG)**: TG1: Every important decision regarding resource policies is always adapted according to individual needs; TG2: Specific HR policies are always considered for specific groups of employees with a common set of needs; TG3: No action is ever taken unless its impact on specific groups of employees with common needs is evaluated.

Remaining Measures

Role Ambiguity (RA) (7-point Likert scale): 'In this project...': **RA1**: I know exactly what is expected of me; **RA2:** I know that I have divided my time properly; **RA3:** I have clear, planned goals, and objectives for my task; **RA4:** Explanation is clear of what has to be done; **RA5:** I feel certain about how much authority I have; **RA6:** I know what my responsibilities are.

Team Climate (TC) (7-point Likert scale): 'In this project...': **TC1:** Participants were supported for developing new ideas, regardless of the eventual success/failure of these ideas; **TC2:** There was space to experiment with new ideas; **TC3:** Failures and setbacks were tolerated by management; **TC4:** Creation and sharing of new knowledge were supported.

Team integration (TI) (7-point Likert scale): 'During this NSD project...': **I1:** Different departments cooperate effectively to achieve mutual goals; **I2:** There is little or no tension among employees from different departments

Perceived Resource Adequacy (PRA) (7-point Likert scale): 'In this project ...': **PRA1:** Our firm's top management allocated all the monetary resources required to complete the specific project; **PRA2:** Our firm's top management allocated all the personnel required to complete the specific project; **PRA3:** Our firm's top management provided the NSD participants an adequate amount of time to complete this project; **PRA4:** Our firm's top management provided all the information required to complete the specific

project; **PRA5:** Our firm's top management allocated all the IT resources required to complete the specific project.

Perceived Resource Competence (PRC) (7-point Likert scale): 'In this project...': **PRC1:** Had our firm's top management allocated to this NSD project less monetary resources, we would have achieved the same outcome; **PRC2:** Had our firm's top management allocated to this NSD project less personnel, we would have achieved the same outcome; **PRC3:** Had our firm's top management given to this NSD project a more strict time schedule, we would have achieved the same outcome; **PRC4:** Had our firm's top management allocated to this NSD project less IT resources, we would have achieved the same outcome; **PRC5:** Had our firm's top management allocated to this NSD project less info, we would have achieved the same outcome

NSD team internal performance (IP) (7-point Likert scale): 'In this project, we achieved ...': **P1:** high adherence to cost for

development; **P2:** the assigned time schedule; **P3**: the original goals; **P4:** efficient and effective use of resources. *Anchoring for all the above measures is from 'I strongly disagree' to 'I strongly agree'*

Project Innovativeness (In) (6-point Likert scale): To what extent was this project innovative (anchored from 'Not at all' to 'Extremely')

Appendix B: Details of the Analysis Strategy

To test the structure of our IMO concept we initially employed an exploratory structural equation modelling (ESEM) procedure (Asparouhov and Muthén, 2009) for the items belong to the initial 6 first-order factors. This robust practice avoids the numerous problems associated with the traditional two-step (first EFA, then CFA) process (see Fornell and Yi, 1992 for these problems) and, given the presence of cross-loadings in the final solution, reveals a fuller picture of the underlying factorial structures for the studied items. Hence, methodologically this is a more robust approach when testing for complex constructs like IMO. The best fit indices were generated for the theoretically expected six-factor solution. These were: $\chi 2$: 182.497; df: 49; p: .000 with scaling correction for MLR: 1.0187 (baseline model $\chi 2$: 3866.835; df: 136); RMSEA: .064 (CI 90% .054–.074; p= .009); CFI: .96; SRMR: .014; the cross-loadings were also minimal. We performed a traditional CFA for the second-order IMO latent after fixing the original seventeen items loadings on their respective six first-order factors. The fit indices were: $\chi 2$: 489.671; df: 113; p: .000 with scaling correction for MLR: 1.8883 (baseline model is as above, namely $\chi 2$: 3866.835; df: 136); RMSEA: .07 (CI 90% .065–.078; p= .009); CFI: .90; SRMR: 0.053. The IMO either as first-order or second-order (see Table 1 of Appendix A) exhibits high loadings of items on their expected factors, high explained item R2, small cross-loadings and acceptable average variance extracted (AVE), composite reliability (CR) and SIC (squared inter-construct correlation) estimates. The first-order factors of the IMO latent exhibit: a) loadings: .74–.86; b) items' explained R2: .52–.74; c) AVE scores: .57–.65; and d) CR scores: .74–.85. The second-order IMO latent exhibits: a) loadings: .77–.96; b) items' explained R2: .59–.89; c) AVE score: .79; and d) CR score: .96, (Rindskopf and Rose, 1988) suggesting that the treatment of IMO as a second-order latent is acceptable.

In the next stage, we tested the structure of all constructs together . The seven-factor solution from CFA (i.e. IMO as a second-order latent variable and the other 6 latent variables of our theoretical model) exhibited high loadings and items' explained R2 and acceptable AVE, Composite Reliability and SIC estimates. Specifically, the scores were: loadings>.72, items' explained R2>.51, AVE scores> .61, and Composite Reliability scores> .83. The fit indices were also acceptable ($\chi 2$: 141 8.271; df: 362; p: .000 with scaling correction for MLR: 1.3047 (base line model, namely $\chi 2$: 11926 .074; df: 406; RMSEA: .067 (CI 90% .063– .070; p= .000); CFI: .91; TLI: .90; SRMR: .0 48).

The same picture emerged when we looked at parts of the model separately. We first looked at a four-factor solution from CFA (i.e. IMO as a second-order latent variable, TC, RA and TI latent variables of our theoretical model). Results exhibited high loadings and items' explained R2 and acceptable AVE, Composite Reliability and SIC estimates. Specifically, the scores were: loadings>.73, items' explained R2>.53, AVE scores> .63, Square Root AVE> .79, and Composite Reliability scores> .83. The fit indices were also acceptable ($\chi 2$: 691.555; df: 129; p: .000 with scaling correction for MLR: 1.4679 (baseline model, namely $\chi 2$: 5495.947; df:153; RMSEA: .008 (CI 90% .075– .087; p= .000);

CFI: .90; TLI: .88; SRMR: .051). No potential cross-loadings through modification indices were evident (any indices for any cross-loading accounted in average for less than 2.5% potential further reduction in the $\chi 2$ already achieved). We then looked at a three-factor solution from CFA (i.e. the PRA, PRC and IP latent variables of our theoretical model). Results again exhibited high loadings and items' explained R2 and acceptable AVE, Composite Reliability and SIC estimates. Specifically, the scores were: loadings>.72, items' explained R2>.51, AVE scores> .63, Square Root AVE> .78, and Composite Reliability scores> .89. The fit indices were also acceptable ($\chi 2$: 568.139; df: 116; p: .000 with scaling correction for MLR: 1.5417 (baseline model, namely $\chi 2$: 5697.487; df:136; RMSEA: .007 (CI 90% .071– .083; p= .000); CFI: .92; TLI: .91; SRMR: .053). No potential cross-loadings through modification indices were evident (any indices for any cross-loading accounted in average for less than 3.3% potential further reduction in the $\chi 2$ already achieved).

On these grounds we have the necessary re-assurance that the measures employed in this study meet all the requirements for the psychometric qualities (Fornell and Larcker, 1981) and we can then confidently employee them in subsequent analyses. Table 1 provides the correlation matrix for the latent variables.

We then tested for endogeneity. Endogeneity is a complex and major issue as exposed by Heckman (1979) in his selection bias work. The Durbin–Wu–Hausman test was used to check the assumption of exogeneity (cf. Antonakis et al., 2010) of our IMO construct. To do so, we started by constructing 6 indexes for our first-order IMO factors. We used the loadings multiplied by the item scores and divided the result by the number of items loading on each factor). We then constructed a single second-order IMO index (using the first-order factor loadings multiplied by the first-order indexes and dividing by 6, which is the number of factors loading on IMO; coded here as iiIMO). We employed company size in our test and we regressed iiIMO upon company size and computed the residual e_{imoi}. Company size is theoretically justified to affect a company's extent of IMO and an ideal candidate for our endeavor since past studies have shown that medium-sized firms adopt a market orientation to a lesser extent than large and extra-large firms (Liu, 1995) and one would expect the same for IMO according to the extant literature (Gounaris 2006). Size was measured as an ordered 1–3 variable whereby 1: small-size company (51–100); 2: medium-size company (101–250); 3: large-size company (>250 employees). We tested two SEM models in which team climate (TC), role ambiguity (RA) and integration (I) were regressed upon the latent IMO alone.

$(Ii = \gamma_I + \gamma_1 * IMOi + \eta_{1i} , TCi = \gamma_{TC} + \gamma_2 * IMOi + \eta_{2i}, RAi = \gamma_{RA} + \gamma_3 * IMOi + \eta_{3i})$ [1] and IMO and e_{imoi}
$(Ii = \gamma_I + \gamma_1 * IMOi + e_{imoi} + \eta_{1i} , TCi = \gamma_{TC} + \gamma_2 * IMOi + e_{imoi} + \eta_{2i}, RAi = \gamma_{RA} + \gamma_3 * IMOi + e_{imoi} + \eta_{3i})$ [2].

The coefficient for the residual term exhibited strength (-.43 for TC, .37 for RA and -.41 for I) and statistical significance (p<.001) on the three paths, clearly indicating that the latent IMO is endogenous in our setting. In addition, explained R2 of the TC, RA and I substantially increased when the residual e_{imoi} was included, namely: TC from .43

to .84; RA from .13 to .52; I from .46 to .84) (p<.001). We included the form of equation [2] in our final respective models.

We subsequently tested for the existence of common method variance (CMV) biases (Podsakoff et al., 2003:879) although the research design, in theory, precludes this. CMV reflects variance attributable to the measurement method and self-reporting (Bagozzi and Yi, 1990). Following Podsakoff et al. (2003), we had used two procedures at the design stage to ensure a minimal impact of such biases. We assured respondent anonymity and we separated items and construct measures within the research instrument, as suggested elsewhere (e.g., Krishnan et al., 2006). We varied scale anchors and we reversed some to reduce the formation of response patterns. Yet, we also used post-hoc for CMV using the Comprehensive CFA Marker Technique which is able to investigate in depth the impact of CMV contamination (Williams et al., 2010). It has superior capabilities to detect CMV contamination details compared to the Correlational Marker approach (Lindell and Whitney, 2001:116; Richardson et al., 2009). Our marker, Team Cooperation ('TCoop') was measured with a seven-item measure based on Tjosvold et al.'s work (2003) and Mumford, Campion, and Morgeson (2006). The measure exhibited strong psychometric properties (factor loadings > 0.75, AVE: 0.63 and CR: 0.92) and is relevant, it is not a demographic variable, measured using the same Likert scaling and reflects the theoretical properties of 'ideal' markers being susceptible to the same causes of CMV as our main model items (Richardson et al., 2009). We performed a CFA-based, Baseline, Method-C, Method-U and Method-R estimation (see Williams et al., 2010 for details) using TCoop as marker. CMV bias was present but it inflated only about 9.3% of model correlations which is deemed to be within acceptable limits (Malhorta et al., 2006: 1879) and it has not altered the statistical significance of any of the model links (Lindell and Whitney, 2001) leading us to proceed without further corrections for fear of overacting and wrongly distorting the main model estimates (see Williams et al., 2010).

We decided and handled our control variables as follows. We opted to use two control variables as Level-2 covariates due to their nature. The first is firm size. Three dummy variables were initially produced: if size=small (s1), if size=middle (s2) and if size=large (s3). We added s2+s3 to produce a composite dummy ('sz') that reflected medium- and large-size firms' relevance against small ones. We added the control variable sz in all paths of our model). Thus, this compares medium and large company size together (score 1) against small company size (score 0). As a caution, we also checked for a potential conflict regarding our control variable company size (s) and the residual e_{imoi}. The polyserial correlation between them is n.s. (rho=-.0038; s.e.=.04) and small between s23 and (rho=.1326; s.e.=.05), reducing our reservations for the use of company size (s23) as a control variable when used together. We also included NSD project innovativeness ('In') whose original scores were scaled on a 6-Likert from incremental to radical. We averaged all respondent responses to provide a single value per project. This estimate regards the relevance of NSD innovativeness size on each pathway (thus like for sz, we added the control variable in in all paths of our model).

Our analytical strategy regarding our models was as follows. We opted for grand mean centering the raw scores for all items to minimise any effect due to multicollinearity between the independent variables, the moderator and the interaction effects in our two-level modelling context (Raudenbush and Bryk, 2002; Gelman and Hill, 2006). Based on Stage 2-CFA results we generated seven new composite variables reflecting our focus constructs, namely P, PRA, PRC, RA, TC, I, and IMO. We produced single Level-2 scores for IMO by averaging all respondents' respective scores. We subsequently run for all our equations a null model and requested for an intra-class coefficient (ICC) to test whether the use of a multilevel model would fit the data better. ICC. ICC estimates in all our 6 models were substantial, namely: Model 1: .76; Model 2: .80; Model 3: .71; Model 4: .17; Model 5: .72; Model 6: .75. We next tested if random intercept only models are an improvement over null models by requesting a Log-likelihood difference test (employing Stata 15's 'lrtest' command). Random intercept only models were invariably fitting better than their respective null models. Last, we tested if random coefficient models as described in equations (1) to (6) are an improvement over their respective random intercept equivalent ones. Random coefficient only models were invariably fitting better than their respective random intercept only models. We completed our analyses by using the command 'mixed' explicitly also requesting the explicit computation of model parameter correlations. Given the specification and computation of IMO, Size (sz) and Project Innovativeness (In) as Level 2 covariates and antecedents our results refer to cross-level effects for these variables.