Supplementary and complementary congruence at the apex of the organization: management and board as a strategic-oriented multiteam system

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Supplementary and Complementary Congruence at the Apex of the Organisation: Management and Board as a Strategic-Oriented Multiteam System

Abstract

Our knowledge of the top management team (TMT) and board interface in the context of major strategic decisions remains limited. Drawing upon the strategic leadership system perspective (SLSP) and the interface approach, we argue that the two groups constitute a strategic-oriented multiteam system and consider how supplementary (similarity) and complementary congruence (interacting variety) of international and functional backgrounds influence strategic decision-making. Looking at the internationalisation decisions of the largest public firms in the U.K., we find that complementary congruence of international backgrounds and supplementary congruence of functional experience promote the pursuit of new market entries. We extend the SLSP by showing how the cognitive TMT-board interface dynamics associated with supplementary and complementary congruence are important antecedents of strategic outcomes. Further, we find a boundary condition to the interface approach in strategic leadership research by identifying the underlying mechanisms that activate some TMT-board interfaces and not others.

Introduction

Research on the influence of top management teams (TMT) and boards on major strategic decisions has evolved without much attention to the interdependence between these two leadership bodies. Whilst past studies have examined the monitoring effect of boards on TMT decision-making outcomes (e.g. Kor, 2006), we continue to lack a clear understanding of how the board's strategic advisory capacity (cf. Johnson *et al.*, 1996; Stiles and Taylor, 2001) interacts with the knowledge and experience residing within TMTs to influence major strategic outcomes (Huynh *et al.*, 2022; Linder and Foss, 2018; Simsek *et al.*, 2018). Although TMTs typically initiate strategic projects, boards of directors, as the uppermost legal authority in public corporations (Finkelstein *et al.*, 2009), can promote or discourage strategic initiatives that from their perspective are likely to affect shareholder value (Zahra and Pearce, 1989). As the role of board members continues to evolve from that of passive *rubber stamps* (Lorsch and MacIver, 1989; Mace, 1971) to that of 'strategic partners with the executive team' (Boivie *et al.*, 2021, p. 1684), it becomes increasingly important to understand how the congruence of knowledge backgrounds in TMTs and boards can shape strategic outcomes.

In this paper, we consider two distinct mechanisms – supplementary and complementary congruence (Muchinsky and Monahan, 1987) – to explain the combined effect of TMT and board members' knowledge backgrounds on major strategic decisions. On the one hand, knowledge similarity at the TMT-board interface (supplementary congruence) may influence strategic outcomes by enabling a shared understanding of the opportunities and challenges facing the firm. Whilst this shared understanding can promote team cohesion and collaboration (O'Reilly *et al.*, 1993), it can also lead to inertia and groupthink (e.g. Hambrick, 1995). On the other hand, mutually reinforcing knowledge and expertise in the TMT and board

(complementary congruence) may impact strategic outcomes by increasing the variety of inputs and perspectives in the strategic decision-making process. Whilst knowledge complementarities are likely to increase information processing capacity – allowing the firm to solve more complex problems (e.g. Nielsen and Nielsen, 2013) – it can also produce barriers to intergroup interaction and communication (e.g. Li and Hambrick, 2005).

To theorize these two contrasting mechanisms, we draw upon the strategic leadership system perspective (SLSP) (Luciano *et al.*, 2020) to conceive of the TMT and board as a strategic-oriented multiteam system, with each group working independently and interdependently towards both proximal and distal objectives, bound together by a common goal of superior firm outcomes. This perspective overlaps with the notion of a strategic leadership interface, which highlights 'the interdependent social situations in which the attributes, aspirations, and/or activities of strategic leaders […] come into contact with and influence each other' (Simsek *et al.*, 2018, p. 283). Whilst these perspectives recognise that TMTs and boards must have the requisite expertise to fulfil their independent and interdependent roles, both remain agnostic as to whether effective collaboration is achieved through supplementarity or complementarity of such knowledge. Hence, we propose that the influence of congruence at the TMT-board interface can vary according to the type of knowledge that flows through it, and that interfaces that rely upon different knowledge backgrounds, and therefore upon different underlying cognitive bases, can require either supplementarity or complementarity of knowledge to facilitate joint leadership objectives.

Both the SLSP and interface approach emphasise that strategic leaders will collaborate more in situations of strategic importance and particularly so in complex or unstable settings (Luciano *et al.*, 2020; Simsek *et al.*, 2018). We thus consider the context of high-commitment

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internationalisation decisions – defined as new foreign market investments in the form of a majority-controlled subsidiary – as an appropriate strategic context in which to explore our research question. Previous studies have relied on the international and functional backgrounds of strategic leaders as proxies for the information-processing capabilities and domain-specific knowledge that shape international strategic decision-making (e.g. Bunderson and Sutcliffe, 2002; Cannella *et al.*, 2008; Georgakakis *et al.*, 2017). As functional backgrounds are primarily task-oriented (reflecting domain-specific knowledge and expertise) and international backgrounds are predominantly value- and relations-oriented (reflecting socio-cultural awareness and relational skills) (Pelled, 1996; see also Richard *et al.*, 2019; González, 2019a), these two knowledge background dimensions were selected to represent the task- and value-oriented dimensions of effective team functioning (Jackson and Joshi, 2011). The selection of functional and international backgrounds as two observable and distinct TMT-board knowledge interfaces can therefore enable not only an understanding of whether supplementary and complementary congruence mechanisms exist at the TMT-board interface, but also allow for the exploration of the specific shape of such congruence mechanisms across task- and value-/relations-oriented attributes and the relative impact of such TMT-board interfaces in shaping strategic outcomes.

Further, regarding the international background interface, we consider both international experience and nationality backgrounds, as these characteristics also align with Jackson and Joshi's (2011) notion of deep-level and surface-level attributes, respectively, hence allowing us to introduce yet another potentially salient dimension of TMT-board interface dynamics to our analysis. Previous research has shown that international experience and nationality backgrounds influence individual perceptions and represent important sources of social identification and categorisation that distinctly influence executive team behaviours and strategic choices (e.g.

Greve *et al.*, 2009; Herrmann and Datta, 2005; Nielsen and Nielsen, 2011). As there is no corresponding observable surface-level attribute aligning to functional background, we conceive of the functional experience interface as a deep-level interface only, representing the cognitive structures, skills, and competencies of executives stemming from formative-age education and shaped further by work experience in a functional area (Bantel and Jackson, 1989). The international and functional background interfaces thus constitute distinct and balancing *knowledge-based interfaces* (Georgakakis *et al.*, 2017) affecting TMT-board interactions, with international backgrounds representing the capacities and dispositions that enable firms to transcend geographical and institutional boundaries (e.g. González, 2019a; Greve *et al.*, 2009; Nielsen, 2009, 2010a), whilst functional backgrounds representing the extent to which strategic leaders possess a depth and variety of knowledge that can shape their ability to orchestrate internal resources and align capabilities from multiple organisational domains (e.g. Cannella *et al.*, 2008; Lee and Park, 2006; Sethi, 2000).

Our empirical study is based on the largest public U.K.-headquartered firms observed over a period of three years (2011-2013). British firms represent an ideal laboratory in which to investigate the TMT-board interface due to their one-tier board structure, which is known for regular and frequent interactions between executive (TMT) and non-executive (board) directors and their high mutual involvement in major strategic decisions (Glunk *et al.*, 2001; Ruigrok and Greve, 2008). Our results show that the TMT-board interface matters in major strategic decisions and that its impact varies depending on the type and distribution of attributes within and across the groups. More specifically, we find that the underlying mechanism varies according to the type of interface: the international background interface relies upon complementarity of experience, whereas the functional interface depends on supplementarity of experience

backgrounds. Thus, our key finding is that interfaces relying on different cognitive bases operate differently, and that the costs of knowledge diversity in the context of internationalisation can be surmounted in some interfaces (international background) but not in others (functional background).

TMT and board interdependence

According to the upper echelons perspective (Hambrick and Mason, 1984), organisational outcomes are shaped by the collective characteristics and experiences of executives, resulting in unique construed realities that impact their decision-making process. Whilst upper echelons research has produced extensive evidence in support of this perspective, researchers have not sufficiently considered the combined role of the TMT and board in the strategic decision-making process of the firm (Luciano *et al.*, 2020; Nielsen, 2010a; Simsek *et al.*, 2018), despite the recognized importance of this relationship (Finkelstein *et al.*, 2009; Finkelstein and Hambrick, 1996; Hambrick and Mason, 1984). The SLSP (Luciano *et al.*, 2020) reinvigorates this conversation by arguing that the TMT and board jointly provide strategic leadership for the firm, with one group being dependent on the activities and goals of the other.

Drawing on systems theory (Katz and Kahn, 1978; Marks *et al.*, 2001), the SLSP conceives of the TMT-board relationship as one in which the two groups constitute a strategic-oriented multiteam system. Systems theory suggests that in multiteam systems, teams pursue different proximal goals yet still 'share at least one common distal goal; and in doing so exhibit input, process, and outcome interdependence with at least one other team in the system' (Mathieu *et al.*, 2001, p. 290). Extending this argument to the TMT-board relationship, Luciano *et al.* (2020) argue that, despite their independent tasks and objectives, the two groups are still bound together

by a superordinate goal of superior firm outcomes, and that *attention* to working both independently and interdependently can lead to system effectiveness.

According to the SLSP, system effectiveness is increased when TMTs and boards devote attention to the joint attainment of the following three tasks: strategic visioning, aligning goals, and processing information. Strategic visioning is conceived as the articulation and maintenance of the firm's strategic vision; aligning goals, as 'goal priority congruence and compatibility of subgoals with the superordinate goal' (Luciano *et al.*, 2020, p. 679); and processing information, as the gathering, interpretation, and selection of information with the goal of making sound strategic decisions. Even though Luciano *et al.* (2020, p. 678) note that for TMTs and directors to collaborate they must 'have the requisite knowledge, skills, and abilities to fulfil their individual primary roles', the theory remains silent as to whether such requisite capacities need to be congruent for the groups to effectively perform these three joint tasks. Likewise, even though Simsek *et al.* (2018, p. 302) note that the board can act as a catalyst 'by improving the action capability of the entire management team', research on interfaces has yet to consider the complexities that arise concerning the different types of knowledge that flow through them.

Supplementary and complementary congruence at the TMT-board interface

A key tenet of Muchinsky and Monahan's (1987) interactionist behaviour theory is the notion of congruence fit, in which fit within a group can be achieved either by matching the characteristics of an individual with those of the group (supplementary congruence) or with the needs of the group (complementary congruence) (see also Georgakakis *et al.*, 2021). Supplementary congruence emerges when an individual within a group 'possesses characteristics which are similar to other individuals' (Muchinsky and Monahan, 1987, p. 268). As similarity breeds information exchange and integration (Turner, 1987), supplementary traits facilitate the

emergence of shared norms and values, which can provide organisational leaders with a shared basis for communicating, building mutual trust, and enabling the evaluation and choice of strategic actions (Carpenter *et al.*, 2003). According to Luciano *et al.* (2020, p. 680), shared understanding between managers and directors 'enables more effective integration and clarity for the execution of both group and shared tasks', which can improve collaboration in the first two joint tasks identified by the SLSP: strategic visioning and aligning goals.

In contrast, complementary congruence arises when the traits of an individual 'make whole' or add to what is missing in the overall system (Muchinsky and Monahan, 1987, p. 271). The existence of complementarities strengthens a group that is 'seen as either being deficient in or requiring a certain type of person in order to be effective' (Muchinsky and Monahan, 1987, p. 271). In practice, however, identifying 'what exactly constitutes a fit or match is not totally clear'(Muchinsky and Monahan, 1987, p. 269). With many potential combinations of complementarities possible, successful ones are those in which the weaknesses or needs of the group are 'offset by the strength of the individual, and vice-versa' (Muchinsky and Monahan, 1987, p. 271). Implicit in Muchinsky and Monahan's (1987) theorising is thus the notion of a successful *interaction* between the individual and the group that strengthens the collective, leading to positive outcomes. Such an *interactionist approach* to complementary congruence is prevalent in the literature (e.g. Daniels and de Jonge, 2010; Liao *et al.*, 2004; Sengupta *et al.*, 2015). In the context of the TMT-board interface, an effective interaction can thus offset weaknesses between the groups, increasing their information processing capacity, i.e. the third joint task identified by the SLSP. According to Luciano *et al.* (2020, p. 679), these gains in information processing capacity can increase system effectiveness by reducing barriers to information elaboration and preventing suboptimal strategic decisions.

From this literature, we infer that supplementarity increases system effectiveness by encouraging executives and directors to devote more attention to the joint elaboration of strategic visioning and goal alignment, whereas complementarity achieves a similar goal by enhancing their capacity to jointly process information. Both the SLSP and the interface approach, however, offer little guidance regarding the types of knowledge in which supplementarity or complementarity more easily materialize, thus assuming that all interfaces operate equally (Simsek *et al.*, 2018). Given that different sources of diversity are unlikely to have the same effects (Tasheva and Hillman, 2019), we propose that the TMT-board interface is underpinned by a supplementary/complementary trade-off in which the former increases the compatibility and frequency of communication by engendering shared trust and alignment and the latter the quality and value of such interactions by enabling access to different stocks of knowledge and expertise. Below we explore this potential trade-off in terms of competing hypotheses regarding the effects of supplementarity and complementarity of TMT and board international and functional backgrounds.

Hypotheses

Supplementary congruence of international backgrounds. The notion of supplementary congruence posits that a *reinforcing* supplementary fit can emerge at the TMT-board interface when the two leadership groups possess corresponding levels of a given attribute. In the context of international backgrounds, this would suggest that TMTs and boards with similar international profiles would be inclined to 'share common aspects of cognitive processing and a common way of interpreting events' (Cable and Edwards, 2004, p. 823); this similarity can promote internationalisation by reducing uncertainty and friction in interpersonal relationships, irrespective of whether the corresponding levels of international knowledge in the TMT and board are *high-*

high or *low-low*. This duality is possible as the advantages associated with a more internationally oriented team may come at the expense of increased distance associated with more international team members (Lumineau *et al.*, 2021).

Indeed, if TMT and board members possess correspondingly high levels of international backgrounds, they are likely to be aligned on the overall strategic importance of international growth and to be mutually cognisant of international opportunities, thus building on their common global perspectives to promote internationalisation of the firm. For instance, if international backgrounds are similar across the TMT and board, board members will be better positioned to provide more coordinated and relevant advice on key strategic decisions (Carpenter *et al.*, 2003). Equally, however, if TMT and board members possess correspondingly low levels of international knowledge backgrounds, their background similarity may serve to facilitate and align TMT-board interactions, allowing the leadership groups to communicate more constructively out of a common national perspective and thus find more rapid consensus on how to act on arising opportunities overseas. Whilst *ceteris paribus* such leadership groups may be less naturally inclined to pursue international growth strategies, they are also less likely to experience the divergent perspectives and cultural frictions that are often associated with more international teams (Gomes *et al.*, 2011; Li *et al.*, 2000; Singh *et al.*, 2019). Indeed, Richard *et al.* (2004) find that low levels of racial diversity – and therefore increased cultural homogeneity – can enhance performance by promoting a shared worldview and unified culture that improves communication, collaboration, and satisfaction. These arguments thus support the notion that cognitive alignment in underlying international perspectives can engender a shared vision of strategic growth and thus aligned internationalisation objectives, which can result in a more effective implementation of strategic intentions by leveraging the collective knowledge and resources of the two groups.

We thus posit that supplementarity of international backgrounds is likely to focus the minds of TMT and board members and enable the development of a shared vision and goal alignment in the context of key strategic decisions.

Hypothesis 1a. There is a positive relationship between TMT and board international background similarity and new foreign market entry decisions.

Complementary congruence of international backgrounds. The positive side of TMTs with diverse international backgrounds is that variety can bring socio-cognitive benefits in the form of enhanced international attention, allowing the team to leverage their international knowledge and networks to bridge cultural and institutional gaps in foreign markets and identify valuable opportunities overseas (e.g. Athanassiou and Nigh, 2002; González, 2019a; Herrmann and Datta, 2005). For instance, internationally experienced TMTs are able to process information more effectively, increasing their ability to absorb the risks and complexity of entry into new markets and enhance these firms' ability to pursue more innovative growth and expansion strategies (Barkema and Shvyrkov, 2007; Vermeulen and Barkema, 2002). Similarly, nationally diverse TMTs are better equipped to face a 'diverse cultural, institutional, and competitive environment' (Nielsen & Nielsen, 2011, p. 185), allowing them to pursue more expansive internationalisation strategies (Nielsen, 2010b). Such international TMTs, however, still have to interact with board members when pursuing major strategic projects. In consequence, board members need to also possess the requisite international knowledge to fulfil the demands associated with their board roles (Barroso-Castro *et al.*, 2011; Carpenter *et al.*, 2003; Rivas, 2012a). Rivas (2012a), for instance, shows that internationally experienced directors can influence internationalisation by providing the firm with complementary resources and experience. Thus, a contrasting form of

congruence, complementary congruence, can emerge when both TMTs and boards exhibit high levels of international background diversity.

We advance the notion that board international background diversity can strengthen the influence of TMT international background diversity on major international expansion decisions for three reasons. First, such diversity can expand the information search process, and therefore the identification of a wider range of international opportunities, by increasing the breadth of inputs available at the helm of the organisation (Greve *et al.*, 2009; Naranjo-Gil *et al.*, 2008). TMTs will have stronger support from internationally knowledgeable board members who are in a better position to advise on the development of distant and unfamiliar opportunities overseas (Barroso-Castro *et al.*, 2011, 2020; Rivas, 2012a). Second, directors with diverse international backgrounds are more likely to be embedded in non-overlapping networks that complement those of the TMT, therefore providing the firm with non-redundant information and resources in foreign markets (Athanassiou and Nigh, 1999; González, 2019a, 2019b). Third, international background diversity can reduce groupthink (Hambrick, 1995). Bantel and Jackson (1989) suggest that decision-making teams facing complex, non-routine situations can benefit from having a multiplicity of perspectives, skills, and abilities. In the context of international strategic decisions, directors with a multiplicity of international backgrounds can thus increase the board's capacity to act as a legitimate monitor that both challenges the TMT and offers novel advice.

Overall, these arguments suggest that international strategic outcomes are dependent on the extent of international background diversity within and across the TMT and board. Thus, we propose that a variety of international backgrounds within the board is likely to complement and reinforce the benefits of such variety within the TMT, thereby strengthening the relationship between TMT international background diversity and international expansion decisions.

Hypothesis 1b. Diversity in board international backgrounds positively moderates the relationship between diversity in TMT international backgrounds and new foreign market entry decisions.

Supplementary congruence of functional backgrounds. Supplementary congruence of functional backgrounds can reduce basic semantic gaps by providing executives and directors with a common vocabulary and problem-solving schema. Functional similarity also facilitates mutual identification, interpersonal attraction, and ease of communication (Chattopadhyay *et al.*, 2004), which can promote the pursuit of international strategic growth by enabling the emergence of a joint vision and strategic goal alignment at the TMT-board interface facilitated by overlapping approaches and shared norms of collaboration.

The following mechanisms support the notion that supplementary congruence of functional backgrounds can facilitate international growth. First, TMT-board functional similarity can contribute to the alignment of resources and capabilities from multiple organisational domains by reducing the challenge of inter-unit coordination. Since executives from different functional domains may find it difficult to share complex information and collaborate effectively with colleagues from different functional areas (Finkelstein and Hambrick, 1990), similarity can increase the likelihood of achieving genuine goal alignment and a shared strategic vision as overlapping knowledge and experience reduce knowledge asymmetries (e.g. Richard *et al.*, 2020). Knight *et al.* (1999, p. 453) find that functional diversity can lead to 'less similarity among TMT members' interpretations about the firm's strategic orientation'. Second, functional background similarities across key decision-making teams are likely to enhance predictability (cf. Smith *et al.*, 1994), reducing intra group conflict and negative social categorisation costs and therefore increasing the likelihood of developing a shared strategic vision and aligned objectives

in the internationalisation process. Mesmer-Magnus and DeChurch (2009) find that more homogenous teams with high knowledge supplementarity are more likely to share and integrate unique information. Functional similarity is also likely to enhance the speed of such decision making (cf. Cannella *et al.*, 2008), facilitating major internationalisation decisions that typically require the board's endorsement. Third, functional similarity is likely to improve intra- and inter-team dynamics by lessening social categorisation costs and therefore inhibiting the emergence of negative stereotypes that can hurt internationalisation by engendering behavioural disintegration and communication difficulties (Barkema and Shvyrkov, 2007). Such social savings reduce the need to excessively expend energy and resources on group functioning and maintenance, facilitating adaptation to change as more homogenous teams 'react faster, are more flexible, use superior problem solving techniques, and are more productive and efficient than less integrative teams' (Smith *et al.*, 1994, p. 432).

Thus, we posit that TMT-board functional similarity can lead to a more focused and less fragmented approach towards strategic orientation. This similarity can promote international market entries by allowing managers and directors to more effectively leverage internal resources to pursue shared visions and aligned strategic goals, whilst also minimising the social frictions that may negatively affect complex decision-making contexts.

Hypothesis 2a. There is a positive relationship between TMT and board functional background similarity and new foreign market entry decisions.

Complementary congruence of functional backgrounds. The upside of TMT functional diversity is an increase in 'the breadth of knowledge, perspectives, experience, and capabilities that the overall team can bring to bear in a decision situation' (Cannella *et al.*, 2008, p. 770). Diversity of formative knowledge and cognitions within the TMT can be essential in contexts

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characterized by flows of complex and unstructured information (Hambrick, 1995), as it allows 'for a broader scope of task-relevant perspectives to be applied to the task' (Bell *et al.*, 2011, p. 716). TMT functional diversity can also stimulate exchange and debate, increasing the depth and effectiveness of the decision-making process (Certo *et al.*, 2006; Simons *et al.*, 1999). A multiplicity of functional backgrounds within the TMT can thus promote internationalisation not only by enhancing creativity and generating a wider range of alternative solutions, but also by providing the firm with access to an extended pool of non-overlapping knowledge (e.g. Bunderson and Sutcliffe, 2002), perspectives (e.g. Bell *et al.*, 2011), and networks (e.g. Parker *et al.*, 2019). Indeed, research shows that firms with TMTs displaying high levels of functional heterogeneity exhibit more expansive international strategic postures (Carpenter and Fredrickson, 2001). However, functional diversity can also emerge within boards (Rivas, 2012b; Wincent *et al.*, 2014), which means that the strategic plans put forth by functionally diverse TMTs can potentially be strengthened (weakened) by functionally heterogeneous (homogenous) boards.

We put forth the notion that board functional diversity can strengthen the influence of TMT functional diversity on internationalisation for three main reasons. First, functional diversity at the TMT and board can provide the firm with a multiplicity of knowledge and perspectives that represent a source for search and innovation otherwise unavailable to firms with more homogeneous multiteam systems at the top of the organization (Bantel and Jackson, 1989; Wiersema and Bantel, 1992). Studies show that such formative and task-oriented forms of diversity can enhance creativity, problem-solving, and decision-making by promoting divergent thinking and more elaborate information-processing (Bell *et al.*, 2011; Jackson and Joshi, 2011; Nielsen, 2009). Second, functional background differences may be easier to assimilate than more

ingrained differences such as nationality and race (Krishnan *et al.*, 1997; Pelled *et al.*, 1999),

thus potentially making the benefits of such multiplicity more extractable. Williams *et al.* (2017)

find that hiring rookies from outside a firm's industry results in faster growth. Third, Bell *et al.*'s

(2011, p. 731) meta-analysis suggests that 'a team member's functional background may

influence a team member's perspective more strongly than other variables' due to the length and

extent of such formative experiences. Functional diversity may thus hold the key to reducing the

parochialism that often typifies teams with homogenous functional backgrounds (e.g. Bunderson

and Sutcliffe, 2002; Raskas and Hambrick, 1992; Tasheva and Hillman, 2019). For instance,

research shows that functional diversity makes executives more cognisant of diverse information

(Bunderson and Sutcliffe, 2002) and less committed to the status quo (Hambrick *et al.*, 1993),

thus potentially facilitating the pursuit of substantive international growth strategies.

Overall, this means that strategic outcomes such as internationalisation can be mutually

dependent on the extent of functional diversity within and across the two groups, such that the

capacity for divergent thinking that leads to disrupting strategies can be the result of TMTs and

boards independently exhibiting high levels of functional background diversity.

Hypothesis 2b. Diversity in board functional backgrounds positively moderates the relationship

between diversity in TMT functional backgrounds and new foreign market entry decisions.

--------Insert Table 1--------

Methodology

Sample and data

The sample population consists of the largest U.K. public firms that appeared at least once in the

top 100 firms by market capitalisation between the years of 2011-2013. We focus on very large

public firms as these firms are more likely to internationalise and to do so via foreign

subsidiaries. This exercise resulted in a strongly balanced panel composed of 119 firms. The dataset includes hand-collected biographical data on a yearly average of 1,050 non-executive directors and 700 managers. Due to the unavailability of data for some firms, we had to exclude 20 firms from the analysis, resulting in a final sample of 99 firms. For these 99 firms, we gathered data on new market entries for three lagged two-year periods, 2011-2013, 2012-2014, and 2013-2015, resulting in a strongly balanced dataset of 297 firm-year observations. To account for potential differences between the final sample and the target population, we ran a series of two-sample Kolmogorov-Smirnov tests. Results show no significant differences between the samples in terms of top managers international experience ($p = 1$), board international experience ($p = 0.99$), TMT nationality diversity ($p = 1$), previous degree of internationalisation ($p = 0.75$), Return on Assets ($p = 0.99$), and firm size ($p = 0.99$).

Data sources

We obtained data on foreign subsidiaries, as well as basic demographic information about TMT and board members, from the Companies House database and annual reports. We hand-collected more detailed career information from a variety of publicly available sources, such as annual reports, directors' biographies, and LinkedIn profiles.

Dependent variable

New market entries. Count of new market entries involving the creation of a new majority-controlled foreign subsidiary during three two-year periods (lagged): 2011-13, 2012-2014, and 2013-2015. We consider that two subsequent years, i.e. t_{+2}, is a reasonable time frame to observe changes in international posture as a result of a given TMT-board composition in time t_0 (e.g. Carpenter and Fredrickson, 2001; Geletkanycz and Hambrick, 1997; Greve *et al.*, 2009).

Independent variables

Supplementarity measures. To build TMT-board similarity measures (international experience, nationality, and functional background), we relied upon cosine similarity. TMTs and boards exhibit different sizes, and research shows that heterogeneity is positively associated with the size of the groups under study (Allison, 1978). Unlike simpler approaches to similarity, such as those based on a Jaccard index of overlapping (size of intersection divided by the size of union of two sets), cosine similarity circumvents this challenge by calculating similarity as the cosine of the angle between two vectors projected in multi-dimensional space (e.g. Park *et al.*, 2020; Wijewickrema *et al.*, 2019). Cosine similarity is superior because even if a TMT and board are far apart because of size (boards in our sample are about 50% larger than TMTs), their representing vectors could still have a smaller angle between them, i.e. be similarly oriented. In our case, a first vector is composed of a TMT trait (e.g. Vector A: GBR, GBR, ITA, FRA, GBR) and a second vector of the same board trait (e.g. Vector B: GBR, GBR, FRA, GBR, DEU, ITA, GBR, CHN). The result of calculating the cosine similarity between these two vectors, in this case nationality, is an angle θ that measures how far the TMT vector would have to be moved in multi-dimensional space so that it could rest on top of the board vector. The formula to obtain the cosine similarity between vectors A and B is as follows:

$$Similarity = \cos(\theta) = \frac{\sum_{i=1}^{n} A_i B_i}{\sqrt{\sum_{i=1}^{n} A_i^2} \sqrt{\sum_{i=1}^{n} B_i^2}}$$

Where A and B are vectors containing a list of traits from the TMT and board, respectively. A value of 1 indicates perfect similarity, whereas a value of 0 that the two vectors are unrelated. Cosine similarity thus reflects how closely associated/oriented a TMT and board are in terms of a

particular knowledge background, the strength of which will reflect the importance of supplementary congruence at the TMT-board interface.

 Complementarity measures. Whereas supplementary congruence captures the closeness between the TMT and the board along a certain attribute, an interactionist approach to complementary congruence attempts to capture the importance of a multiplicity of attributes *within* and *across* the two groups, i.e. the importance of their independent diversity and interaction. To achieve empirical equivalence between the theory and the construct, we first develop measures that capture the independent reservoirs of diversity within the TMT and the board, which we then interact in our empirical model to assess the importance of complementarity dynamics at the TMT-board interface. We focus on an interaction, as opposed to some form of complementarity scores, because, as Muchinsky and Monahan (1987) note, it is impossible to know *a priori* the specific combinations of complementarities (of which there could be many) that could lead to increases in the outcome variable. To calculate measures of TMT and board nationality diversity, we relied on a Blau (1977) index for heterogeneity, as used in TMT research (e.g. Carpenter 2002; Finkelstein and Hambrick 1996; Nielsen and Nielsen 2013). The index captures the dispersion of nationalities across TMT and board members, respectively, using the formula: Nationality diversity = [1 - $\sum$ (p_i)2], where *p* is the percentage of members in the ith nationality. Regarding TMT and board international experience diversity, we relied on an adaptation of Blau's (1977) index as introduced by Bunderson and Sutcliffe (2002). The measure represents the intra-personal diversity of work experience clustered by country and underscores both the geographical breadth and temporal depth of an individual's international career. The index is calculated as follows: International experience diversity = $[1 - \sum_{i=1}^{n} p_i^2]$, where *n* is the number of countries in which an individual has worked in, and p_i is the proportion

of the individual's career that was spent in country *i*. Finally, to obtain a measure of TMT and

board functional background diversity, we relied on a count of different functions within each

group, as per the following 10 categories: production, research, marketing, design,

finance/accounting, human resources, general management, legal, strategy/corporate

development, and other. Higher counts indicate higher intrateam functional diversity. We used a

count, and not a Blau index, as counts implicitly consider the expectation 'to ensure the

availability of crucial functional input during the process of making important product-related

decisions' (Sethi, 2000, p. 3).

Control variables

We control for factors known to contribute to the firm's decision to internationalise: R&D

intensity (percentage of R&D expenses over revenue); firm product diversification (number of

different SIC codes); previous firm performance (average ROA from previous two years); firm

size (natural logarithm of total assets); TMT size; and board size. To account for all possible

forms of previous firm-level internationalisation experience, we control for the firm's degree of

internationalisation (DOI) at the beginning of the study period, which we obtained by developing

a three-component index with foreign sales, foreign assets, and foreign subsidiaries as suggested

by Sullivan (1994) and operationalised in this form by Contractor *et al.* (2003). To develop such

DOI index, we used principal component analysis to combine foreign sales, foreign assets, and

foreign subsidiaries into a single dimension, using the component eigenvectors as weights for the

index. Further, we account for the cultural distance between the firm and its subsidiaries by

controlling for the number of different cultural zones in which the firm is present according the

11 cultural zones of the world identified by Ronen and Shenkar (1985, 2013). Finally, we control

for industry munificence and industry dynamism since, according to both the SLSP and the

interface approach, these two industry characteristics can influence the extent of TMT-board

collaboration. Industry munificence refers to the degree to which the environment currently supports sustained growth (Aldrich, 2008). We calculate industry munificence as the rate of growth (regression coefficient of time on annual average sales, per industry) divided by the mean value of sales (Beard and Dess, 1984). Industry dynamism refers to the stability or uncertainty of the environment in which the firm operates and is measured as the instability in sales growth in the firm's industry. We calculate industry dynamism by obtaining the standard error of the regression slope coefficient divided by the mean value of sales (Beard and Dess, 1984). We calculate industry munificence and dynamism for a six-year period at the beginning of the study period.

Data analysis

We originally deemed a Poisson regression appropriate for this exercise as the dependent variable is a count of new market entries. However, an exploratory analysis revealed that the variance of the dependent variable was higher than its mean (10.98 and 2.16, respectively), posing a risk for overdispersion (Cameron and Trivedi, 1998). Overdispersion tests in all models were indeed significant. We thus used a negative binomial model that accommodates for overdispersion by modelling the variance as a quadratic function of the mean (Cameron and Trivedi, 1998). Likelihood ratio tests showed the negative binomial to be a better fit to the data than the Poisson in all models. A Variance Inflation Factor (VIF) test showed that all VIF scores were below the rule of thumb of 10, with an average of 1.47, implying no multicollinearity issues (Cohen *et al.*, 2013). We standardised all variables to facilitate model convergence and visualisation.

Endogeneity Strategy

The diversity in the experiences, origins, and professional backgrounds of TMTs can all result in increased firm internationalisation. However, such traits can also be the result of the firms'

outcomes and strategies in foreign markets (Greve *et al.*, 2009). To account for such

endogeneity, we used a two-step Heckman (1979) procedure (Bascle, 2008). This method has

been used in Negative Binomial models in the context of management research (e.g. Chen *et al.*,

2016). The Heckman model requires the identification of an instrumental variable that is

significantly correlated with the endogenous variable but not with the dependent variable.

Previous research has identified the industry average of international experience diversity as a

valid instrument for international experience diversity, as such industry average tends to

correlate with this variable but not with internationalisation (e.g. Georgakakis and Buyl 2020). In

our case, the industry average of TMT international experience diversity was indeed correlated

with TMT international experience diversity ($r = 0.50$; $p = 0.00$) but not with internationalisation

($r = -0.03$, $p > 0.05$). As for TMT nationality diversity, a suitable instrument that we identified

was also the industry average of TMT nationality diversity, which was correlated with this

variable ($r = 0.50$; $p = 0.00$) but not with internationalisation ($r = 0.09$; $p > 0.05$). The industry

average of TMT functional diversity was also correlated with TMT functional diversity ($r = 0.34$;

$p = 0.00$) but not with internationalisation ($r = -0.03$; $p > 0.05$), making it also suitable as an

instrumental variable. To run the Heckman model, we first ran an independent Probit regression

analysis for each endogenous variable (dichotomized) – nationality diversity, international

experience diversity, and functional background diversity – as dependent variables (see

Appendix A).

    After we ran the Heckman's first-step model, we obtained the inverse Mill's ratio (IMR) for

each variable and included this value as an additional control variable in three separate Negative

Binomial regressions (one per TMT-board interface), thus correcting for any potential

endogeneity and sample selection issues (Bascle, 2008). Results indicate that such correction was

not needed in any of the three models as the IMR was not significant (model not shown). This is understandable, as the dependent variable is lagged for two years after the observation of the independent variables.

Results

Table 2 shows descriptives and correlations; Table 3, three Negative Binomial models, one for each interface. Model 1 in Table 3 shows that results for TMT-board nationality similarity (supplementary congruence) are not significant, whilst those for the interaction between TMT and board nationality diversity (complementary congruence) are positive and significant at the 10% level ($p < 0.10$). Figure 1a shows a contour plot depicting predicted expected foreign market entries as a function of relevant/feasible ranges of TMT and board nationality diversity. This plot not only confirms the positive moderating role of board nationality diversity (top right quadrant), but also that low levels of TMT nationality diversity can be, at least to an extent, counterbalanced by higher levels of this trait within the board (bottom right quadrant). It is worth noting that the main effect of TMT nationality diversity on internationalisation is negative, whilst the main effect of board nationality diversity is positive. Given that our variables are standardised (so that at values below the mean such baseline signs would change), these results indicate that increases in TMT nationality diversity that are not accompanied by corresponding increases in board nationality diversity can result in fewer foreign market entries (top left quadrant). Figure 2b presents a sensitivity plot showing these effects in more detail. As can be seen in this plot, increases in TMT nationality diversity have a negligible effect on foreign market entry at low levels of board nationality diversity. This plot also shows that the effect of board nationality diversity on expected entry is always positive and that it becomes more pronounced as TMT nationality diversity increases in tandem with board nationality diversity.

--------Insert Table 2--------

--------Insert Table 3--------

--------Insert Figures 1a and 1b--------

Regarding international experience, results in Model 2 in Table 3 also show support for the notion that complementary congruence between the TMT and board international experience promotes internationalisation $(p < 0.05)$, whereas there is no such support for the supplementary congruence hypothesis. Figure 2a presents a similar contour plot showing a straightforward moderating effect of board international experience (top right quadrant). Figure 2b presents a sensitivity plot showing how this positive relationship becomes more pronounced at higher levels of both TMT and board international experience diversity. Therefore, the TMT-board international background interface is likely underpinned by a complementary presence of diverse nationalities and international experience within and across the groups, rather than by similarity in such backgrounds (H1a not supported, H1b supported).

--------Insert Figures 2a and 2b--------

Concerning supplementary and complementary congruence of functional backgrounds (H2a and H2b, respectively), results show support for H2a at the 10% level $(p < 0.10)$. This indicates that functional similarity between the TMT and board relates to internationalisation. In contrast, results for the interaction between the TMT and board functional diversity are also significant $(p < 0.05)$, albeit – contrary to our hypothesised prediction – negative. These results indicate that high functional diversity at the TMT-board interface can result in a form of multiteam dynamics that reduce system effectiveness. Figure 3a presents a contour plot showing how such negative effects are not necessarily crippling at moderate levels of functional diversity. It is only at high levels of TMT and board functional diversity that such effects can weaken foreign market entries

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(top right quadrant). Figure 3b presents a sensitivity plot showing these effects in greater detail. Both plots not only confirm a negative interaction at high levels of TMT and board functional diversity, but also that more functionally diverse TMTs may potentially benefit, albeit marginally, from the presence of less functionally diverse board members.

--------Insert Figures 3a and 3b--------

Discussion and conclusion

Our study reveals several important findings. First, we find that the TMT-board international interface is supported by complementary congruence of knowledge and experience. This means that the positive influence of TMT international background diversity on internationalisation is dependent on the extent of corresponding diversity within the board. In contrast, we find that supplementary congruence along the same international traits (i.e. nationality and international experience) does not appear to influence the firm's ability to capitalise on international strategic opportunities. These findings suggest that TMT nationality diversity and international experience diversity, as value-/relations-oriented sources of surface- and deep-level diversity, respectively, can have a stronger impact on the propensity to enter new foreign markets if these are matched with correspondingly high levels within the board. This finding provides empirical validation of the notion that the board can serve as a catalyst or constraint to the TMT (Simsek *et al.*, 2018). Our theorising suggests that the mechanism behind this relationship is likely to be the enhanced information processing that materialises when both the TMT and the board exhibit high degrees of international knowledge diversity. Thus, whilst an increase in international backgrounds implies differences in backgrounds, experiences, and cognitions (Lumineau *et al.*, 2021) – and hence increased difficulties in building trusting relationships (De Jong *et al.*, 2020) –, the

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resulting challenges appear to be surmountable as long as increases in TMT internationalisation are matched by the board.

Second, we find that the TMT-board functional interface operates in an inverted manner. Specifically – and contrary to our *ex ante* hypothesised relationship – we find that complementary congruence of functional backgrounds between managers and directors *reduces* the likelihood of firms pursuing major internationalisation decisions, whereas supplementary congruence fosters such decisions. Increased levels of TMT-board functional diversity, a task-oriented form of deep-level diversity, thus appear to reduce system effectiveness by hindering the groups' capacity to process information effectively and work interdependently, whereas functional similarity increases system effectiveness by offering a common platform that leads to aligned goals and joint vision. According to Milliken and Martins (1996, p. 411), functionally diverse teams 'may suffer from larger "process losses" than less functionally diverse teams', resulting in cognitive disadvantages, a result that has been replicated in other settings (e.g. Ancona and Caldwell, 1992; Bunderson and Sutcliffe, 2002; Cannella *et al.*, 2008). However, Mischel (1977) finds that the cognitive advantages of functional diversity can more easily materialize in low uncertainty industries, thus suggesting that the beneficial effects of variety in this trait can be contingent on environmental characteristics (see also Greening and Johnson, 1997; Richard *et al.*, 2019). Our results extend these team-level findings to multiteam systems located at the apex of the organisation; they show how the costs of TMT-board functional diversity can indeed outweigh potential gains in the context of complex and uncertain internationalisation projects in which effective collaboration between these two uppermost leadership bodies is critical.

Third, these findings highlight the importance of recognising the synergistic effects of balancing forms of congruence at the TMT-board interface. According to Milliken *et al.* (2003), divergent thinking is a major force behind the creative process. However, any creative process still requires a corresponding degree of convergent thinking to achieve project implementation and execution (Bell *et al.*, 2011). The evidence presented in this paper suggests that international background diversity represents the driving force behind the disruptive thinking required to recognize and seize international opportunities, whereas functional similarity represents the common semantic platform upon which to build the required consensus to bring such opportunities to fruition. Building on Tasheva and Hillman's (2019) theorising that sources of diversity can either be substitutes or complements, these findings suggest that optimal fit at the TMT-board interface can require the presence of both complementary and supplementary congruence along different yet balancing traits. Indeed, research on TMT cultural diversity has shown that its negative side-effects can be minimized in more behaviourally integrated teams (Jarzabkowski and Searle, 2004; Lo *et al.*, 2020; Nielsen and Nielsen, 2013). We extend this research by showing how the synergistic effects of different interfaces are also present in multiteam systems such as the TMT and board.

The findings of our paper also extend our understanding of interactionist behaviour theory (Muchinsky and Monahan, 1987) by investigating the *simultaneous* effects of complementary and supplementary congruence in a cognitively demanding setting. Research on these two mechanisms has evolved independently, with little conceptual or empirical integration (e.g. Bundy *et al.*, 2018; Cable and Edwards, 2004; Lauring and Selmer, 2018). Early theorising, however, indeed conceived of complementary and supplementary fit as separate processes with different but interconnected logics (Kristof, 1996). Kristof (1996, p. 6), for instance, notes that

optimal fit 'may be achieved when each entity's needs are fulfilled by the other and they share similar fundamental characteristics'. We provide empirical support for this early theorising by showing how international background diversity at the TMT-board interface makes the system whole by offsetting knowledge limitations across the groups, whilst functional similarity reduces the cost of such cognitive diversity by providing the foundational integration required to channel the group's efforts toward strategic growth opportunities.

Finally, we extend the SLSP and the interface approach by providing conceptual and empirical clarity regarding the influence of interaction congruence at the TMT-board interface. Research on within-team diversity shows that different types of diversity affect team outcomes differently (Nielsen and Nielsen, 2013). However, previous research has focused on single interfaces and theories (Simsek *et al.*, 2018). We expand our general understanding of both theoretical perspectives by (1) demonstrating the importance of the TMT-board interface in major strategic decisions, (2) disentangling the mechanisms that matter in understanding how supplementary and complementary congruence at the TMT-board interface affect such decisions, and (3) showing how the distribution of the costs and benefits of diversity at the interface of a strategic leadership system varies with the type and dimension of knowledge background being examined (i.e. task-oriented vs value-/relations-oriented and surface-level vs deep-level). We thus respond to a question that has remained unanswered in IB research to date, namely 'how do managers and boards of directors interact in making significant international expansion decisions' (Hitt *et al.*, 2006, p. 859). Further, by focusing on large firms and different cognitive and relationship drivers, we respond to calls for more research on the variables, contexts, and firm characteristics that are associated with strategic leadership systems comprised of TMTs and

boards (Luciano *et al.*, 2020), thus contributing to a redirection of the field's discussion to 'both sides of the ledger' (Simsek *et al.*, 2018, p. 283).

Limitations and recommendations for further research

The study has some limitations. First, our focus on large British firms can limit the generalizability of our results. The U.K. has a one-tier board structure, where executives (TMT) and non-executives (board) are likely to share more of the responsibility for major strategic decisions than in other institutional contexts, e.g. two-tier systems where TMTs and boards tend to operate separately with less overlapping responsibilities and boards are less likely to get involved in major strategic decisions. Further research could therefore explore the mechanisms identified in this paper and the extent to which they apply in alternative institutional settings. Second, we conceived of complementary congruence as an interaction (i.e. followed an interactionist approach) due to known challenges in assessing the potential combinations that can lead to increased market entries. Future research with more granular data can explore the effects of complementary congruence in more detail by, for instance, investigating the specific combinations of TMT-board complementarities that can lead to ideal outcomes. Finally, future research can also explore the same or other TMT-board interfaces in different settings or extend these findings to other forms of organisational interfaces, such as those with other internal or external actors.

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Appendix A

Table A1. Heckman 1st step probit model: TMT international experience diversity.

Variable	Estimate	Std. Error
(Intercept)	-4.627***	0.799
Firm product diversification	-0.001	0.052
Board nationality diversity	2.108***	0.587
TMT size	0.032	0.028
Board size	0.125†	0.053
Firm size	0.174	0.081
Degree of internationalisation (DOI)	0.481***	0.208
Industry controls	Yes	

Signif. Codes: † $p<0.10$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Table A2. Heckman 1st step probit model: TMT nationality diversity.

Variable	Estimate	Std. Error
(Intercept)	-4.476***	1.027
Firm product diversification	0.145*	0.065
Board nationality diversity	5.331***	0.829
TMT size	0.032	0.033
Board size	-0.104*	0.061
Firm size	0.097*	0.093
Degree of internationalisation (DOI)	1.015*	0.275
Industry controls	Yes	

Signif. Codes: † $p<0.10$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Table A3. Heckman 1st step probit model: TMT functional background diverstiy.

Variable	Estimate	Std. Error
(Intercept)	-3.788***	0.875
Firm product diversification	-0.109†	0.060
Board nationality diversity	0.992	0.745
TMT size	0.437***	0.049
Board size	0.062	0.064
Firm size	-0.105	0.096
Degree of internationalisation (DOI)	0.027	0.263
Industry controls	Yes	

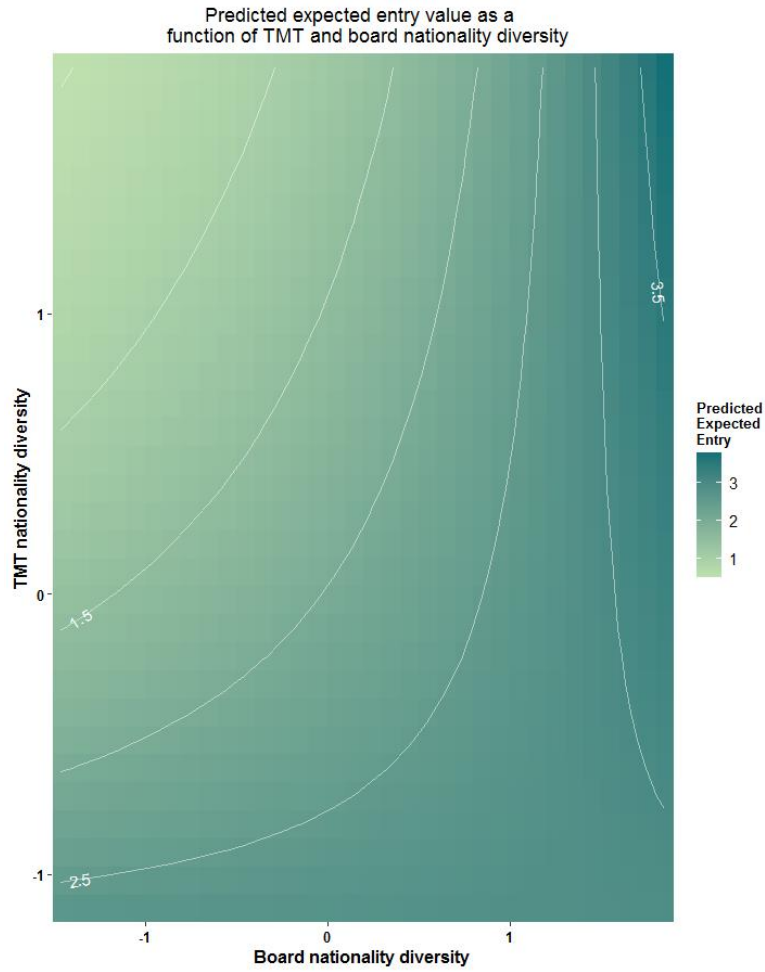Signif. Codes: † $p<0.10$; * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Figure 1a. Positive moderating effect of board nationality diversity (feasible max/min range for TMT and board nationality diversity, standardised, rest of control variables set to their mean level for numeric/centred variables and to their mode level for factors)
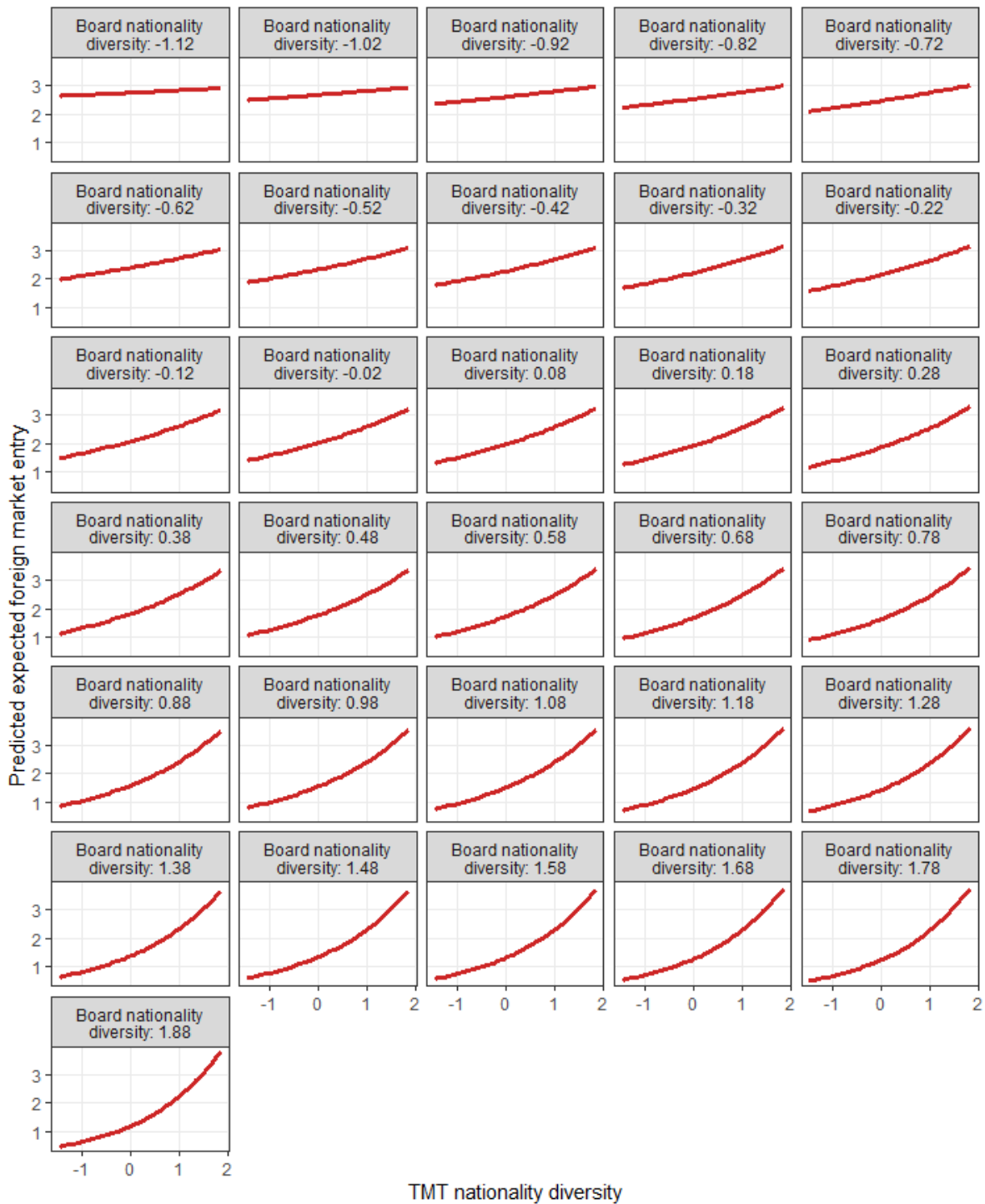
Figure 1b. How is the effect of TMT nationality diversity on foreign market entry affected by board nationality diversity? (Feasible max/min range for TMT and board international experience diversity, standardised, rest of control variables set to their mean level for numeric/centred variables and to their mode level for factors)

Figure 2a. Positive moderating effect of board international experience diversity (feasible max/min range for TMT and board international experience diversity, standardised, rest of control variables set to their mean level for numeric/centred variables and to their mode level for factors)
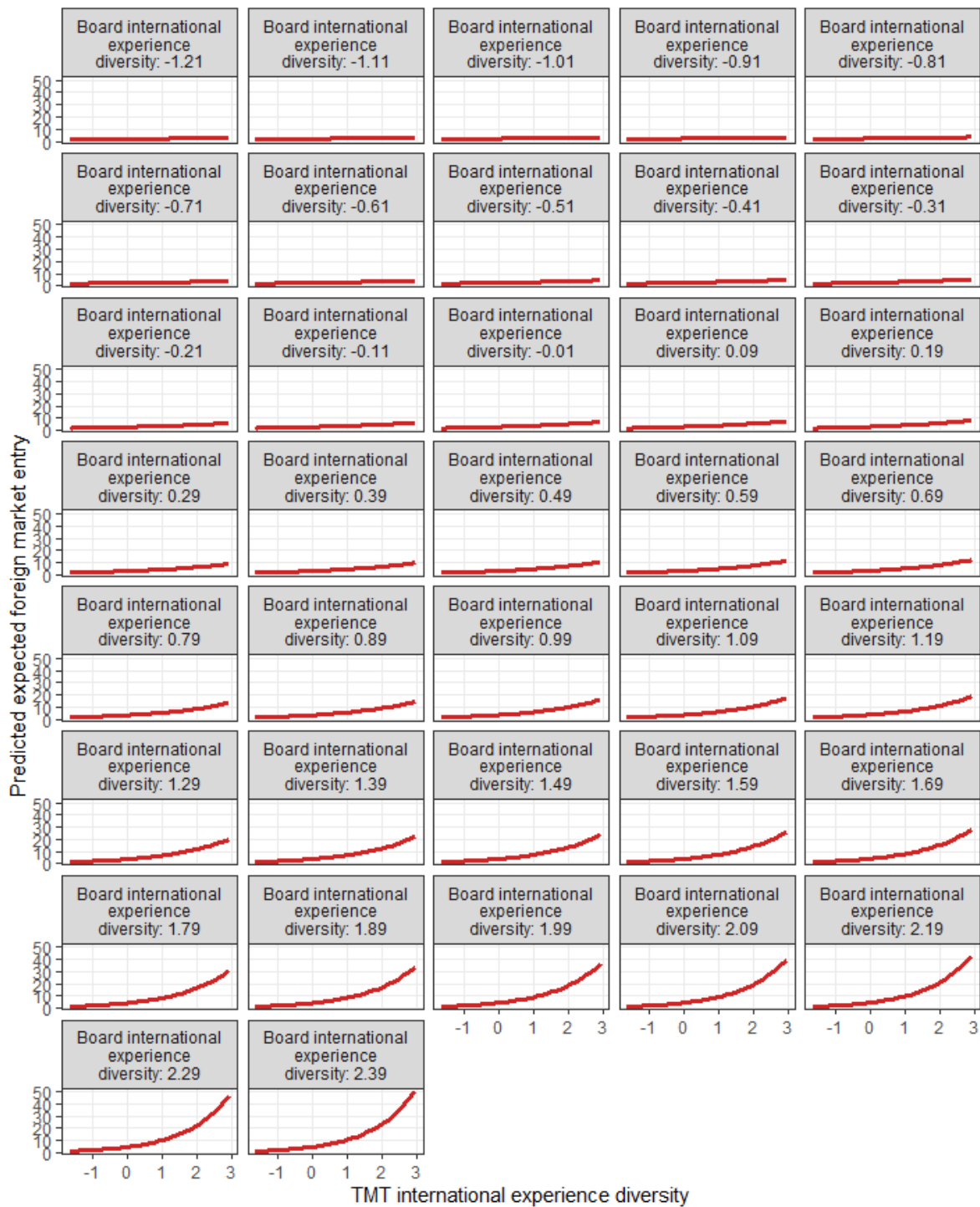
Figure 2b. How is the effect of TMT international experience diversity on foreign market entry affected by board international experience diversity? (Feasible max/min range for TMT and board international experience diversity, standardised, rest of control variables set to their mean level for numeric/centred variables and to their mode level for factors)

Predicted expected entry value as a function
of TMT and board functional diversity
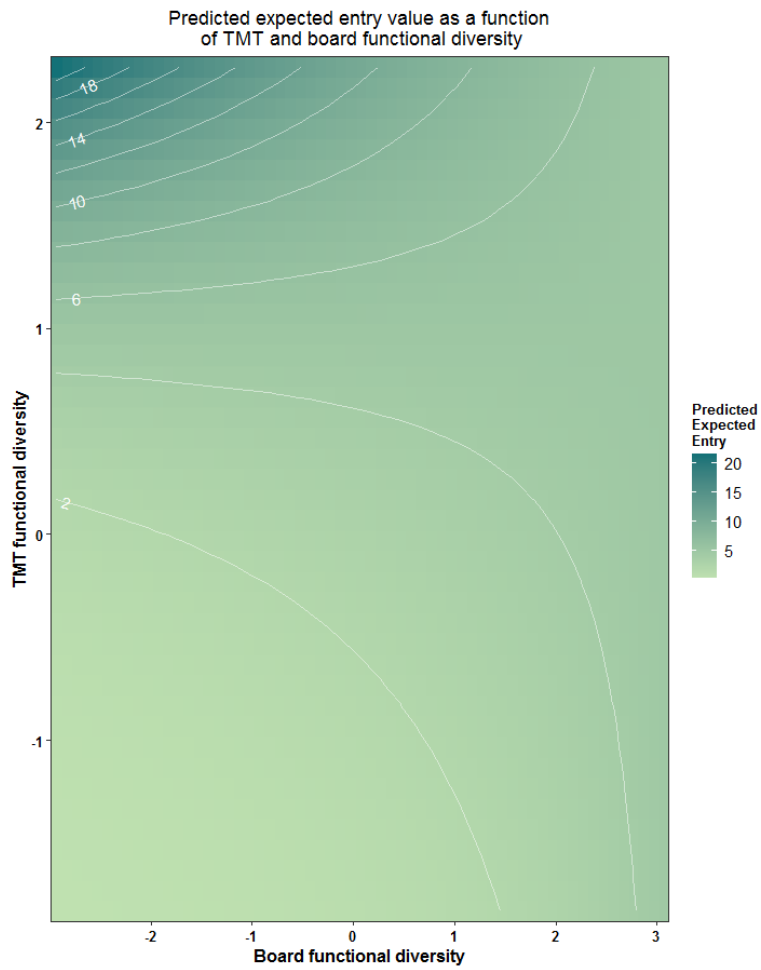
Figure 3a. Negative moderating effect of board functional diversity (feasible max/min range for TMT and board functional diversity, standardised, rest of control variables set to their mean level for numeric/centred variables and to their mode level for factors)
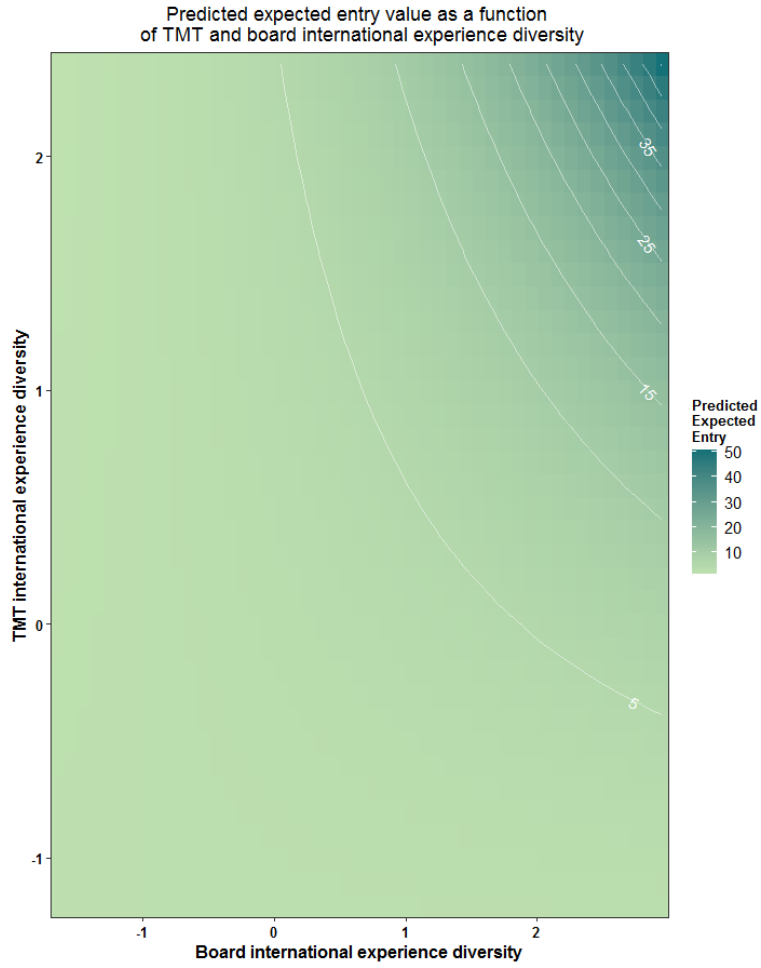
Figure 3b. How is the effect of TMT functional diversity on foreign market entry affected by board functional diversity? (Feasible max/min range for TMT and board functional diversity, standardised, rest of control variables set to their mean level for numeric/centred variables and to their mode level for factors)
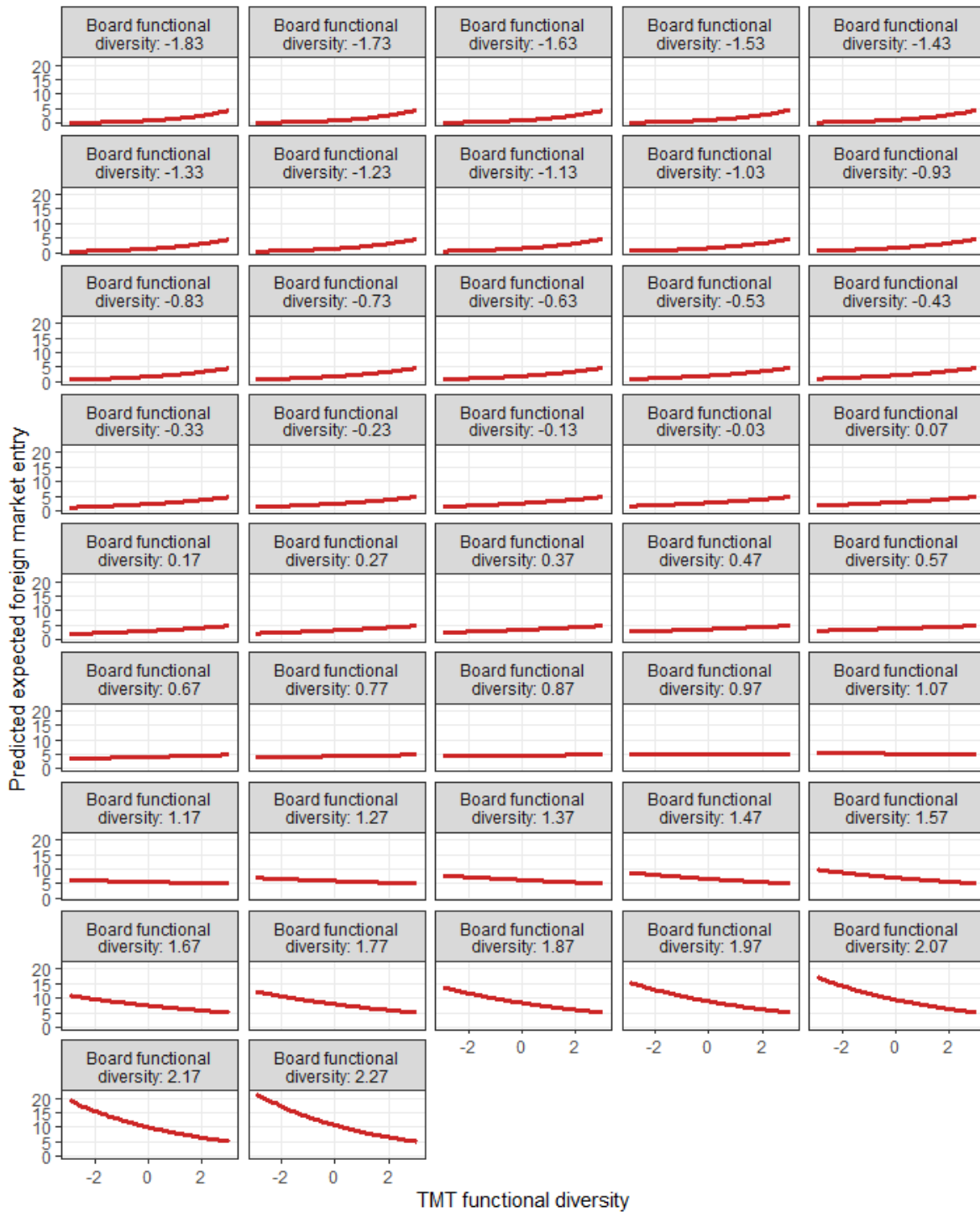
Table 1. Summary of hypotheses and results.

Reported hypotheses	Predicted effect (sign)	Result (Coefficient and sign)	Supported or not supported
H1a. There is a positive relationship between TMT and board international background similarity and new foreign market entry decisions	Positive	Nationality similarity: -0.059 International experience similarity: 0.121	Nationality similarity: Not supported International experience similarity: Not supported
H1b. Diversity in board international backgrounds positively moderates the relationship between diversity in TMT international backgrounds and new foreign market entry decisions	Positive	Nationality diversity: 0.199 International experience diversity: 0.208	Nationality diversity: Supported ($p < 0.10$) International experience diversity: Supported ($p < 0.05$)
H2a. There is a positive relationship between TMT and board functional background similarity and new foreign market entry decisions	Positive	0.187	Supported ($p < 0.05$)
H2b. Diversity in board functional backgrounds positively moderates the relationship between diversity in TMT functional backgrounds and new foreign market entry decisions	Positive	-0.184	Not supported ($p < 0.01$, negative)

Table 2. Descriptive statistics and correlations.

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Market Entry	2.17	3.31	~																			
2. DOI	1.11	0.79	0.22*	~																		
3. Cultural distance	0.79	0.36	0.21*	0.78*	~																	
4. Firm product diversification	4.39	2.24	0.01	0.20*	0.37*	~																
5. R&D Intensity	1.08	3.29	0.02	0.31*	0.26*	0.09	~															
6. ROA	0.07	0.06	0.00	0.03	0.06	-0.05	0.16*	~													
7. Firm size	8.98	1.67	0.06	0.14*	0.29*	0.17*	0.02	-0.51*	~												
8. Industry Munificence	0.06	0.05	0.19*	0.18*	0.05	-0.05	0.05	0.08	-0.05	~											
9. Industry Dynamism	0.06	0.05	0.08	0.05	-0.09	0.19*	0.13*	-0.03	0.07	0.58*	~										
10. Team size	7.20	3.77	0.10	0.29*	0.32*	0.08	0.10	0.01	0.31*	-0.18*	-0.12*	~										
11. Board size	10.67	2.26	0.09	0.16*	0.20*	-0.01	0.06	0.16*	0.52*	-0.01	0.12*	0.32*	~									
12. TMT functional diversity	4.05	1.67	0.18*	0.30*	0.29*	-0.04	0.19*	0.14*	0.15*	-0.16*	-0.19*	0.82*	0.32*	~								
13. Board functional diversity	3.92	1.00	0.00	0.08	0.14*	0.07	0.15*	-0.07	0.24*	0.14*	0.13*	0.17*	0.29*	0.13*	~							
14. Nationality similarity	0.96	0.07	-0.06	-0.31*	-0.26*	-0.15*	-0.09	-0.01	-0.01	0.13*	-0.01	0.15*	-0.03	0.11	-0.05	~						
15. International experience similarity	0.94	0.06	0.04	-0.10	-0.10	-0.03	-0.01	-0.03	-0.03	-0.06	0.11	0.08	-0.07	0.06	0.14*	0.32*	~					
16. Functional background similarity	0.93	0.03	-0.10	-0.28*	-0.31*	0.07	0.18*	0.13*	0.23*	-0.01	0.05	0.32*	0.24*	0.41*	0.33*	0.05	0.04	~				
17. TMT nationality diversity	0.32	0.29	0.14*	0.75*	0.61*	0.28*	0.28*	0.12*	0.33*	0.02	0.06	0.39*	0.18*	0.32*	0.18*	-0.29*	-0.10	0.24*	~			
18. Board nationality diversity	0.36	0.25	0.18*	0.72*	0.61*	0.15*	0.18*	-0.10	0.38*	0.04	0.10	0.28*	0.34*	0.27*	0.17*	-0.39*	-0.24*	-0.33*	0.75*	~		
19. TMT international experience diversity	0.13	0.15	0.17*	0.49*	0.53*	0.21*	0.11	-0.01	0.32*	-0.01	-0.07	0.29*	0.20*	0.24*	0.22*	0.24*	-0.08	0.22*	0.57*	0.50*	~	
20. Board International experience diversity	0.11	0.11	0.12*	0.34*	0.26*	-0.03	0.05	0.13*	0.27*	0.07	0.19*	0.25*	0.25*	0.25*	0.08	-0.10	-0.14*	0.18*	0.35*	0.48*	0.22*	~

* P<0.05

Table 3. Results for negative binomial regression for count of new market entries.

Variables	Model 1: Nationality diversity		Model 2: International experience		Model 3: Functional background	
	β	S.E.	β	S.E.	β	S.E.
(Intercept)	0.145	0.324	0.076	0.326	0.343	0.295
DOI	0.140	0.186	-0.082	0.158	0.027	0.143
Cultural distance	0.278†	0.151	0.273†	0.150	0.354*	0.151
Firm product diversification	-0.139	0.097	-0.183*	0.093	-0.171†	0.095
R&D intensity	0.027	0.082	0.026	0.079	-0.045	0.077
ROA	-0.140	0.094	-0.095	0.093	-0.124	0.093
Firm size	-0.045	0.130	-0.118	0.131	0.008	0.126
Industry munificence	0.141	0.110	0.330**	0.106	0.217*	0.100
Industry dynamism	0.107	0.122	-0.131	0.125	0.100	0.115
TMT size	0.101	0.090	0.020	0.085	-0.363**	0.140
Board size	0.096	0.091	0.156†	0.089	0.092	0.088
TMT-board nationality similarity	-0.059	0.087				
TMT nationality diversity	-0.277*	0.140				
Board nationality diversity	0.253†	0.140				
TMT-board nationality diversity interaction	0.199†	0.107				
TMT-board international experience similarity			0.121	0.087		
TMT international experience diversity			0.216*	0.106		
Board international experience diversity			0.298**	0.103		
TMT-board international experience diversity interaction			0.208*	0.099		
TMT-board functional background similarity					0.187*	0.091
TMT functional diversity					0.589***	0.151
Board functional diversity					0.178*	0.082
TMT-board functional diversity interaction					-0.184**	0.069
Industry dummies	Yes		Yes		Yes	
Year effects	Yes		Yes		Yes	

Signif. Codes: † p<0.10; * p<0.05; ** p<0.01; *** p<0.00