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Search within Limited Space?

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Geographical reconfiguration in global value chains: Search within limited space?

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Abstract

Research summary: Negative performance feedback in offshoring service activities entices firms to undertake geographical reconfiguration of their global value chains (GVCs) as a substitute for, or complement to, change of governance modes, decomposition of offshored activities, or shift of local service providers. In this study, we build on performance feedback theory and the concept of problemistic search to examine the extent to which firms move offshored service activities to new countries when facing negative performance gaps. We also examine if these relocations take place within a search space limited by the managers' cognitive span. We formulate a set of hypotheses revolving around this idea of search within a limited space. Our hypotheses are supported when tested on a sample of global sourcing projects undertaken by 223 firms between 1995 and 2012.

Managerial summary: The essence of reconfiguration is the continuous search for efficient combinations of functions, local service providers (when functions are outsourced), governance modes, and—in our case—locations. Limiting the search for improved combinations to fewer locations entails a higher dependence on these locations maintaining the country-location-specific advantages that made them attractive in the first place. It is thus possible that multinational

enterprise (MNE) managers who reconfigure their GVC in a geographically bounded way in the long run will struggle to compete with MNEs that search for optimality within a broader range of locations as possible remedies for the GVC operations that experience negative performance gaps.

KEYWORDS

geographical reconfiguration, global value chains, performance feedback theory, problemistic search

1 | INTRODUCTION

Different streams of literature converge in arguing that multinational enterprises (MNEs) continuously reconfigure their global value chains (GVCs; Buckley & Casson, 2019; Kano, Tsang, & Yeung, 2020; Pananond, Gereffi, & Pedersen, 2020; Strange & Humphrey, 2019), and that doing so is central for their competitiveness. Extant literature discusses at length choices of foreign location and entry mode; for example, why an MNE decides to outsource a specific service project to a service provider in India, as opposed to locating the project elsewhere or carrying it out in-house. What appears less discussed in the literature is what the MNE will do when some of the operations that form its GVC perform worse than expected (Benito, Petersen, & Welch, 2019).

An implicit assumption found in the literature on GVCs is that MNEs engage in entrepreneurial reconfiguration of governance modes, shift of external suppliers, or decomposition and relocations of activities in order to obtain a better fit with changing circumstances (Kano, 2018; Strange & Humphrey, 2019). There are clear empirical and theoretical reasons for these assumptions. First, as argued by scholars of dynamic capabilities and organizational change, markets evolve, with new entrants and new technologies often making existing arrangements obsolete and forcing firms to search for different, more efficient, configurations of their activities (Karim & Capron, 2016; Larsen, Manning, & Pedersen, 2013). Second, managers adjust their GVC strategy in search of efficient configurations of outsourced and internalized operations of the GVC because of competitive pressure (Benito et al., 2019; Cuervo-Cazurra, Mudambi, & Pedersen, 2018). The reconfiguration of GVCs as described by international business (IB) scholars allows managers to optimize the bundles of countries, activities and locations taking stock, among others, of performance feedback (PF).

There is mounting empirical evidence of firms having to reconfigure their GVC to remedy performance shortfalls. These GVC reconfigurations include change of host location, discontinuation of certain activities, cancellation of supplier contracts, and shift of governance mode (Aron & Singh, 2005; Manning, Massini, Peeters, & Lewin, 2018; Oshri, 2011). For example, in 2005, the Toronto Star, Canada's highest circulation newspaper, outsourced and relocated its call center operations to Halifax in the Nova Scotia province of Canada. In 2008, they moved 20% of these operations to Bangalore, India. Then, in 2011, the firm decided to close the Halifax operation and split the volume between two centers in Jamaica and Bangalore (Wilson, 2013). It is thus important to study GVCs dynamically, capturing the fact that outcomes of strategic

decisions provide critical information for managers, and help guiding reconfiguration decisions (Benito, Petersen, & Welch, 2009). Yet, there is a research gap in that most studies focus on how GVC are configured, as opposed to examining how they change (Kano, 2018; Pananond et al., 2020). We address this gap, which has become particularly important given the extent of GVC reconfiguration that has been taking place since the late 2010s because of nationalism, the coronavirus pandemic, and the conflict in Ukraine (Ciravegna & Michailova, 2022; Cuervo-Cazurra, Doz, & Gaur, 2020; Gereffi, Lim, & Lee, 2021; Verbeke & Yuan, 2021).

We use PF theory (Bromiley, 1991; Greve, 1998) to examine how the outcomes of global sourcing operations influence GVC reconfiguration. We focus on geographic reconfiguration, more specifically the relocation of administrative and technical services (ATS) to a new country. We turn our attention to projects in new countries in which the ATS activities to a certain extent *replicate* those of an existing offshored project, that is, replication in terms of activities that fall within the same business area (ITO, BPO, or KPO). Had these projects been very dissimilar in nature, including activities belonging to different business areas (e.g., a BPO activity like Finance & Accounting in an existing project and an ITO activity such as software development in a new project), it would not be a case of *re*configuration. In the case where the ATS activities in the existing location are underperforming, we infer that a project *replacement* and not a project *expansion* is taking place. We do not have interview data confirming the reasons why managers decided to open in new locations ATS projects that replicate existing offshored ATS projects. We infer the drivers of these reconfiguration decisions drawing on behavioral theory (Cyert & March, 1963; Surdu, Greve, & Benito, 2021), according to which organizations undertake risky endeavors when responding to negative feedback, though not when responding to positive feedback. Diversifying into new countries *is* risky because of the liability of foreignness (Zaheer, 1995). We therefore assume that if firms were only responding to increasing demand (i.e., expanding the capacity of the GVC as opposed to reconfiguring it in search of efficiency) they would generally be inclined to expand capacity in the same location or, at least, within the same country.[1]

The replacement, which we refer to as "relocation" or "geographical reconfiguration," is likely to take place as a process in which the ailing project will be replaced stepwise and in parallel with the phasing in of the replacing project in a new country in order to ensure that there is no shortfall of capacity during the transition.[2] We know from prior research on offshoring that it is a common practice to respond strategically to negative performance by searching for new locations within the same country *or* in other countries, including the home country, that is, re-shoring (e.g., Contractor, Kumar, Kundu, & Pedersen, 2010; Piatanesi & Arauzo-Carod, 2019; Stringfellow, Teagarden, & Nie, 2008).

In line with PF, we also use the concept of problemistic search (Cyert & March, 1963; Dothan & Lavie, 2016; Posen, Keil, Kim, & Meissner, 2018; Simon, 1955) to examine whether geographic reconfiguration takes place within a limited search space defined by the cognitive span of the managers. The basic tenet of this concept is that managers search in the vicinity of the perceived problem. Managers are intendedly rational, but only to a certain extent (Simon, 1976). As such, they do not search far and wide for alternative locations but limit their search to relatively familiar territory.

With the mentioned insights from the management and strategy literature on resource reconfiguration, IB literature on GVCs, PF theory and the concept of problemistic search, we address the following two research questions: (1) *To what extent do MNEs reconfigure their GVC by moving underperforming ATS projects to other countries, and* (2) *does this relocation take place within a search space confined by decision makers' cognitive limitations?*

We would like to highlight two contributions offered by our study: First, we shed light on GVC *re*configuration. Extant literature offers a great deal of information about various GVC configurations and their determinants (e.g., Cuervo-Cazurra et al., 2018; Hernández & Pedersen, 2017; Porter, 1986) as well as insights into the organization of these GVCs and the relationships among the actors (e.g., Gereffi, Humphrey, & Sturgeon, 2005: Kumar, Van Fenema, & Von Glinow, 2009; Strange & Humphrey, 2019). However, the literature is rather sparse when it comes to describing the factors that underlay the GVC reconfiguration and how this reconfiguration unfolds—that is, why and how MNEs reconfigure GVCs in response to environmental changes or PF (Benito et al., 2019; Kano, 2018). Our study helps to fill this research gap, studying the ways in which negative PF shapes GVC reconfiguration.

Second, our study of GVC reconfiguration is—to the best of our knowledge—the first empirical one to combine PF theory and the branch of problemistic search theory that emphasizes the cognitive limitations affecting managers' change decisions (Cyert & March, 1963; Gavetti, Greve, Levinthal, & Ocasio, 2012; Greve, 1998; Katila & Ahuja, 2002; Stuart & Podolny, 1996), including decisions to relocate sourcing operations.

On this background, our study proceeds as follows. First, we introduce the literatures that we use as foundations for our study: the strategy and management literature on resource reconfiguration, the IB literature focusing on GVCs, and studies using PF theory and the concept of problemistic search. Second, we develop four hypotheses (of which three are aligned with the logic of problemistic search) regarding geographical GVC reconfiguration as a managerial response to negative performance gaps, that is, feedback of projects that performed below aspirations. We then account for the data and methods used in the study. Thereafter, we test our hypotheses using a dataset that traces the initial configurations, outcomes, and follow-up steps adopted by 223 firms that restructured their business-support activities between 1995 and 2012. We then discuss the findings and the results of various robustness checks. Finally, we offer our conclusions, point out limitations of the study, and indicate further research avenues.

2 | LITERATURE REVIEW

We begin our literature review with an account for how management scholars (including those in the adjacent disciplines of strategy and organization) have dealt with resource reconfiguration. We then zoom in on studies of reconfiguration in an IB context, including that of GVCs, and subsequently explain PF theory and problemistic search.

2.1 | Reconfiguration in the management literature

The reconfiguration (or recombination) of firms' internal or external resources pervades the management and organizational change literature, but this issue is particular prominent in the resource-based view (Barney, 1991) and its affiliated concept of dynamic capabilities (Teece, Pisano, & Shuen, 1997) in which firms sense and seize opportunities, and reconfigure resources and capabilities accordingly. The concept is typically associated with an organization's adaptive capability in the face of a rapidly changing competitive environment (Eisenhardt, Furr, & Bingham, 2010; Volberda, 1996). The notion of flexibility and resource reconfiguration is rooted in early discussions about organizational responses to dynamic and often unpredictable environments. For example, Burns and Stalker (1961) proposed that "organic structures" are most

suitable for effectively dealing with dynamic environments. Similar notions can be found in the literature on new organizational forms, according to which regular hierarchical forms are inferior to "adhocracies" (Mintzberg & McHugh, 1985), "network organizations" (Miles & Snow, 1986), or "latent organizations" (Starkey, Barnatt, & Tempest, 2000) in dealing with environmental contingencies.

Most of these concepts share the notion that adaptable structures and processes along with "on demand" resource pools are needed to respond to frequent changes in environmental opportunities and risks. Based on that principle, several scholars have developed the notion of the "flexible firm." In Atkinson's model of the flexible firm (Atkinson, 1984), a distinction is made between the "core" and the "periphery." The core is constituted by the full-time workforce while the periphery is composed of highly qualified experts who are hired on a contract basis and pools of redundant lower-skilled labor are hired on demand. Similar notions apply to the model of project networks in project-based industries (see, e.g., Starkey et al., 2000; Windeler & Sydow, 2001) in which firms rely on external labor pools and supplier networks to flexibly adapt to emerging project opportunities and unanticipated, project-specific challenges. The concept of the flexible firm was further developed by Volberda (1996), who introduced the idea that flexibility and stability are interdependent properties. For example, the speed with which certain resources (e.g., labor) can be activated to respond to changing demands may depend on the stability of routines. If routines are too rigid, they cannot be adjusted to more fundamental structural and strategic changes. Similar arguments about the duality of stability and change have been made by other authors as well (e.g., Farjoun, 2010; Schreyoegg & Sydow, 2010).

Resource reconfiguration as a response to negative PF (Park, Schmidt, Scheu, & DeShon, 2007) comes in many variations.[3] Extant research identifies PF as an antecedent of firms' resource reconfigurations in terms of changes in market position (Greve, 1998; Park et al., 2007), positioning within strategic groups (Schimmer & Brauer, 2012), organizational change (Kotiloglu, Chen, & Lechler, 2019), R&D investments (Chen & Miller, 2007; Greve, 2003b), product innovations (Su & Si, 2015; Yayavaram & Chen, 2015), acquisitions (Gaba & Bhattacharya, 2012; Iyer & Miller, 2008), internationalization (Jung & Bansal, 2009), or alliance formation (Baum, Rowley, Shipilov, & Chuang, 2005). The majority of these studies take the firm as the unit of analysis. Our study relies on a more disaggregated level of analysis, as we examine performance gaps in individual offshoring projects and the subsequent reconfiguration of resources related to those projects. As mentioned earlier, our focus is on the relocation of service activities (ATS projects) in response to negative PF. These relocations into new countries involve reconfigurations of internal and external resources, and they take on the characteristics of being both exploitative and explorative.

Reconfiguration has recently become central in IB, in particular with regard to the study of GVCs as we discuss in the next subsection 2.2.

2.2 | GVC reconfiguration

The basic idea of the GVC is fairly simple: The GVC encompasses interdependent activities carried out in different parts of the world required to manufacture an item or provide a service. Products must go through a sequence of value-adding activities in different countries in order to create a "margin" for all firms involved in those value-adding activities (McWilliam, Kim, Ram, & Nielsen, 2020; Mudambi et al., 2018). The GVCs are subject to continuous re-evaluation

and adjustment (Kano, 2018). In this vein, the ability to configure and reconfigure globally dispersed operations in optimal ways is seen as a key driver of MNE competitiveness (Buckley & Casson, 2019).

The search for efficient GVC configurations is limited by the fact that decision makers have neither perfect access to information nor perfect contractual instruments that cover all aspects of their transactions. As an example, there might be misunderstandings regarding the expected outcomes between the parties involved, such as the managers of the MNE office sourcing a service project from an offshore location, and the managers of the in-house subsidiary or external firm providing such service (Dibbern, Winkler, & Heinzl, 2008; Verbeke & Greidanus, 2009). In general, complexity, experience, and organization design may affect the likelihood of matching performance expectations (Larsen et al., 2013). Additionally, as Williamson (1985) argues, there is a risk of opportunistic behavior, such as a manager purposely underperforming in an initial in-house assignment in order to shine in subsequent assignments. Thus, the global sourcing projects that form MNEs' GVCs, such as the ATS projects hereby examined, often fail to perform as expected by the managers who implemented them, failing to meet their performance targets or overshooting them (Benito et al., 2009; Dibbern et al., 2008; Kearney, 2007).

IB strategy scholars drawing from a variety of theoretical traditions confirm that the outcomes of discrete strategic activities provide critical information that managers use in strategic decisions (Barkema, Bell, & Pennings, 1996; Chang, 1995; Das & Teng, 2000; Hayward, 2002; Jung, Beamish, & Goerzen, 2010; Mayer, Stadler, & Hautz, 2015; Nadolska & Barkema, 2007; Santangelo, Meyer, & Jindra, 2016). There is also empirical evidence that firms reconfigure their GVC in a process manner, taking stock of prior decisions and their outcomes, for example, exiting a particular country if their operations there are underperforming, or scaling up their sourcing projects where they are performing beyond their aspirations (e.g., Aron & Singh, 2005; Benito, 2015; Stringfellow et al., 2008; Witsil, 2014). Yet, the ways in which firms reconfigure their GVC remain understudied (Benito et al., 2019; Kano et al., 2020; Narula & Verbeke, 2015), and this is the research gap we address in this study, adopting a theoretical framework based on PF and problemistic search, which we discuss in subsection 2.3.

2.3 | PF and problemistic search

PF theory (Bromiley, 1991; Greve, 1998) provides a method for examining how firms evaluate the outcomes of their operations—their "performance." It simplifies the outcomes of complex decisions into discrete measures of failure or success, which are known as reference points (March & Simon, 1958; Schinkle, 2012). These reference points ease decision making as they function as yardsticks that transform continuous performance measures into discrete indicators of success or failure (Greve, 1998). PF theory suggests that a firm that faces negative performance gaps is more likely to make organizational changes (Cyert & March, 1963; Moliterno & Wiersema, 2007). Negative performance gaps often make decision makers more willing to take the risks associated with change (Bromiley, 1991; Fiegenbaum & Thomas, 1988; Greve, 1998; Kahneman & Tversky, 1979).

Scholars of problemistic search argue that the reconfiguring firms undertake in response to negative PF is shaped by the way in which the firms search for ways to deal with the underperformance (Cyert & March, 1963; Gavetti et al., 2012; Greve, 1998; Katila & Ahuja, 2002; Levinthal & March, 1993; Posen et al., 2018; Stuart & Podolny, 1996; Surdu

et al., 2021). Problemistic search processes address problems under uncertain conditions with decisions made by boundedly rational agents.

Problemistic search processes are triggered by negative performance gaps, that is, when organizational performance falls below aspiration levels. The literature has established triggering conditions, search characteristics, and behavioral consequences of problemistic search processes. Cyert and March (1963) defined these conditions, characteristics and consequences as preeminently local, not only in the vicinity of the problem symptom (e.g., the affected part of the organization), but also in the vicinity of the current alternative (e.g., existing strategy pursued by the organization) with openness to distant search only when no viable solutions seem appropriate under the local conditions (Cyert & March, 1963; Greve, 2003a).

3 | DEVELOPMENT OF HYPOTHESES

Our research design starts from the premise that MNEs respond to negative PF.[4] According to behavioral theory, negative PF should entice organizational responses (Cyert & March, 1963). A possible response is to phase out the underperforming GVC activities without replicating it anywhere—this however, would entail reducing the firm's capacity to meet clients' demand. Another option is to reconfigure geographically the GVC, for example by moving underperforming activities to different locations, including bringing them back to the home country—sometimes referred to as "reshoring" (Albertoni, Elia, Massini, & Piscitello, 2017), or searching for other locations within the same country (Beugelsdijk & Mudambi, 2013; Mudambi et al., 2018). In this study, we focus on geographical reconfiguration of the GVC as a response to negative PF. We hypothesize that the most likely organizational response to negative PF is geographic relocation to new countries on the basis of prior work on GVCs. The continuous search for efficiency is a key feature of GVCs. The ability to improve efficiency through geographic reconfigurations is a source of competitive advantage of the MNEs that lead GVCs (see e.g., Benito et al., 2019; Kano et al., 2020; Pananond et al., 2020). Given that organizations respond to negative PF through a problemistic search for solutions aligned with their expertise, we argue that MNEs' response is to do what they do best: scan for optimal locations where to set up similar ATS projects that replace the underperforming ones, aiming to achieve efficiency improvements.

Our research model and our development of hypotheses unfold in two steps (see Figure 1). The first step is founded on PF theory. The basic tenet of PF theory is that decision-makers—in our case, global sourcing managers—are prone to rethink their strategies and current resource allocations in response to gaps between the aspired and realized levels of performance of some business ventures (in our case, offshore service projects). In particular, negative performance gaps motivate managers to redefine strategies and make changes accordingly. If certain GVC constituents are underperforming, the orchestrating firm is motivated to reconfigure the GVC in order to address the issue.

As outlined above, this GVC reconfiguration may take different forms (see the hexagon in the upper right-hand corner of Figure 1). The MNE may change the portfolio of activities carried out in a certain location (e.g., by downsizing or abandoning certain activities). Alternatively, the MNE may change the governance structure, or some activities may be relocated to more suitable environments (Larsen et al., 2013; Narula & Verbeke, 2015). Regardless of the chosen form of reconfiguration, the essential point is that reconfiguration is more likely in the case of negative PF, than if the aspired and realized levels of performance correspond or go

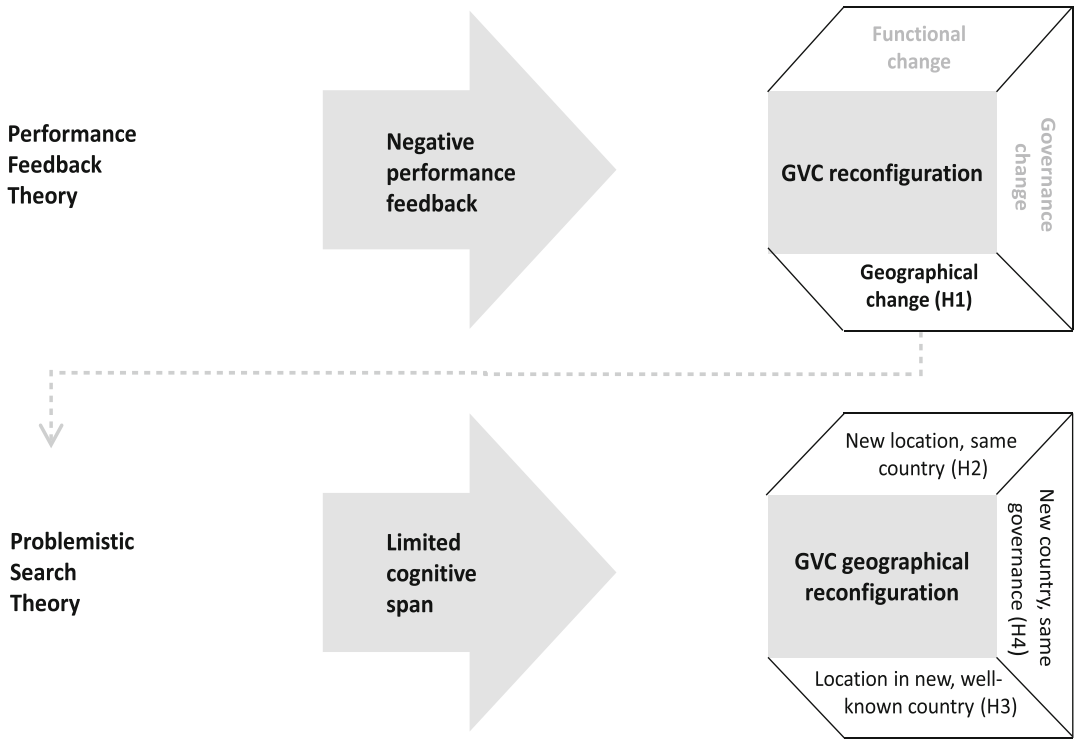

FIGURE 1 The research model (with indication of hypotheses)

beyond aspirations. Therefore, negative performance gaps trigger problemistic search aimed at closing the gap (Cyert & March, 1963; March & Simon, 1958; Simon, 1955). This includes searches for new and potentially better host-country environments for ailing service projects. Hence, we propose the following hypothesis:

> **Hypothesis (H1).** *Firms with ATS projects experiencing negative performance gaps are more likely to relocate these projects to new countries than firms experiencing no or positive performance gaps.*

Given our focus on geographical reconfiguration, we proceed to the second step in our research model and hypothesis development (see the lower part of Figure 1). As hypothesized above, negative performance gaps trigger a problemistic search for actions that may close the gap. However, this search may be restricted by managers' cognitive limitations (see, e.g., Posen et al., 2018). The search tends to be restricted to the vicinity of decision-makers' current knowledge, practices, and expertise. Local search is supported by the idea that organizations are likely to reuse knowledge, practices and expertise, especially when these have yielded successful outcomes (Argote & Greve, 2007; Stuart & Podolny, 1996). When organizations use already-developed knowledge, like that of how to operate in a host country's regulatory environment, the implementation costs of an alternative solution are lower than those involved in following new courses of action (Feldman & Pentland, 2003). However, in their problem-solving efforts, decision makers also seek for some level of variation in the potential solutions they consider (Katila & Ahuja, 2002).

Variation is necessary to provide a sufficient choice to address problems in a context of uncertainty (March, 1991). Hence, while global sourcing managers should prefer searching for alternative locations (cities, regions) in the country where the ailing service operation is located, they are also motivated to establish a search space with sufficient variation among the different alternatives evaluated to address a negative performance gap. Such within-country search makes sense in large host countries, like China and India, that have several alternative locations (and providers) where a range of different solutions are possible because they entail lower implementation costs for the firm (Goerzen, Asmussen, & Nielsen, 2013; Mudambi et al., 2018). However, the ability of firms to provide a set of feasible solutions with sufficient variation is more difficult to obtain in smaller countries. For instance, Oshri (2011) describes that while a labor cost surge pushed Motorola to relocate across countries, moving call center operations from Brazil to Argentina in 2004, HSBC addressed a similar situation by reconfiguring its GVC within Indian destinations. HSBC's COO described the bank's reaction as follows: "India definitely gives us a labor arbitrage when compared to developed countries. However, with the increasing costs of employment [...] we will have to look into the labor arbitrage within the country" (Oshri, 2011, p. 94). Hence, we conjecture the following hypothesis:

> **Hypothesis (H2).** *Firms with ATS projects experiencing negative performance gaps in large countries are less likely to relocate these projects to new countries than are firms with underperforming projects in small countries.*

As discussed in the development of Hypothesis (H2), firms' search for solutions to problems, such as solutions to performance below the aspired levels, is guided by the intention of exploiting already developed expertise, practices or knowledge as they involve lower implementation costs than exploring new avenues (Stuart & Podolny, 1996). But possessing country-specific experience is not the sole difference among organizations. Also, general knowledge regarding international processes matters (Cuervo-Cazurra et al., 2018; Eriksson, Johanson, Majkgård, & Sharma, 1997). If a firm only has experience in one foreign country, a move or expansion to another foreign country is associated with relatively high liabilities of foreignness (Zaheer, 1995) and newness (Kor & Misangyi, 2008; Posen & Chen, 2013). Conversely, if a firm already has operations in multiple foreign locations, the effects of liability of foreignness and the degree of newness are relatively low as the firm has general knowledge about how to conduct business abroad (Mudambi et al., 2018; Zhou & Guillén, 2015).

Organizations that possess a multiple country footprint in their GVC are more likely to face lower marginal cost when defining potential alternatives to relocate ailing operations in new environments, as their ability to cope with country differences has been facilitated by the exposure to a broader range of country conditions (Zahra, Ireland, & Hitt, 2000). Hence, when a negative performance gap arises in one operation, a firm is more likely to include in its search space alternatives that embrace entering new country environments, even if the firm does not possess previous experience in such countries. Firms with operations in a sole country are likely to incur higher costs to implement solutions in new geographical locations. Given this background, we formulate a third hypothesis:

> **Hypothesis (H3).** *Firms with ATS projects initially concentrated in a single foreign country and experiencing negative performance gaps are less likely to relocate these projects to new countries than are firms with underperforming projects spread in multiple countries.*

The development of the fourth hypothesis complements the first hypothesis in which we proposed that MNEs are more inclined to engage in geographical GVC reconfiguration when they experience gaps between the aspired and realized levels of performance that are negative rather than positive or zero. Further, we suggest that the governance mode will moderate the solution search process. Once a negative performance triggers a problemistic search process, a solution search will sequentially identify and evaluate alternative actions to resolve the shortfall. The search space will identify and evaluate solutions not only in the vicinity of the problem (in our case, the particular ATS project in a specific location), but also in the vicinity of the current strategic domain, such as the mechanism used to govern the operation. We thus propose that firms will respond to negative performance gaps by reconfiguring in the areas where they possess more knowledge, be it in managing in-house operations or coordinating outsourced GVC activities across multiple geographies (Argote & Greve, 2007; Mayer et al., 2015).

The choice of governance mode is determined by the nature of the offshore activity, as well as the capabilities of the offshoring firm (Benito et al., 2019; Manning, Larsen, & Bharati, 2015). Changing governance mode is thus often very hard to implement. The MNE may not have the capabilities to carry out internally a previously outsourced operation (e.g., Apple could not respond to negative PF by internalizing the production of physical components of its smartphones). Developing such capabilities is possible but it may take a long time, and hence a change of governance mode is not a likely outcome of negative PF for a single operation. Changing from internalized to outsourced projects also entails several challenges, such as the risk that the new supplier fails on its commitments, for example, causing delays or quality issues, or that it holds the MNE hostage to renegotiations after having signed the contract (Verbeke & Greidanus, 2009). Firms that exercise outsourced activities in their GVC develop skills in management of contractual relations. This involves the development of vendor management competences, including the establishment of strategies to scope projects as well as design and enforce contracts (Hoang & Rothaermel, 2005; Sampson, 2005). They also develop partner-specific competences in relation to, for example, interface coordination, inter-firm governance, performance evaluation, and partner development (Gereffi et al., 2005; Manning et al., 2015; Tallman & Chacar, 2011). Firms whose GVC relies on third party relations must also pay careful attention to vendor monitoring, given risks of incomplete information, complexity, coordination and leakage of intellectual property (Mudambi & Tallman, 2010). Overall, this means that firms performing outsourced offshoring develop structures and routines specialized in the management of third-party relations. An MNE may not have developed the mechanisms that facilitate outsourcing ATS projects that replicate the same functions as an internalized underperforming ATS project, such as suitable interfaces for exchanging knowledge without exposing the firm to the risk of intellectual property right theft. It is also possible that the MNE possesses idiosyncratic capabilities necessary for performing certain ATS activities and these capabilities are difficult to transfer to a third party.

The above comparison suggests that, in cases of negative performance gaps, a shift of local service provider seems more obvious for an outsourced project than a mode shift of an in-house foreign operation since the latter implies a new governance structure with associated mode-switching costs (Anderson & Coughlan, 1987; Welch, Benito, & Petersen, 2018; Whitten, Chakrabarty, & Wakefield, 2010). Hence, we assume that an *inter*-mode switch (i.e., change of governance mode) in general is more difficult and costly than an *intra*-mode switch, also sometimes termed *between*-mode and *within*-mode changes, respectively (Benito, Pedersen, & Petersen, 2005; Pedersen, Petersen, & Benito, 2002; Putzhammer, Puck, & Lindner, 2020). Translated to our sourcing context, a switch of an outsourced ATS project from one local service provider to another local provider incurs less cost and is less difficult than a switch

(outsourcing) of an internal ATS project to a local service provider. Given this assumption, engaging in an intra-mode switch like shifting from one local service provider to another appears as a better alternative to ATS project relocation as a mean to close a negative performance gap than does an inter-mode switch in the form of ATS project outsourcing.[5]

For these reasons, we therefore submit a fourth and last hypothesis:

> **Hypothesis (H4).** *Firms with outsourced ATS projects experiencing negative performance gaps are less likely to relocate their underperforming projects to new countries than are firms with in-house ATS projects.*

4 | DATA AND METHODS

We examine the proposed relations using survey information about the geographical footprint of GVC operations. Our data were collected by the Offshoring Research Network (ORN), a global network of universities and researchers that studies trends in the global sourcing of ATS (e.g., Larsen et al., 2013; Lewin & Peeters, 2006; Massini, Perm-Ajchariyawong, & Lewin, 2010).[6] The ORN collected information through annual surveys from 2005 until 2012. Two different ORN surveys were used in this project: the Corporate Client Survey (detailing changes in the geographical footprint of firms' GVC activities) and the Service Provider Survey (detailing characteristics by activity type).

The ORN database was designed to establish a historical account of a firm's foreign projects (Manning et al., 2018), hence the survey does not include information about projects developed in a firm's home country. The structure of the database allowed us to develop a longitudinal analysis of the ATS sourcing projects completed by a firm in different business areas and countries over time. In addition to the ORN-generated data, we used country information (average wages per year and geographic and cultural distance information) to complement the dataset. We collected yearly data on average country wages from the International Labor Organization (ILO), information on geographic distances from the Center for Information and Research on the World Economy (CEPII; Mayer & Zignago, 2011) and cultural distance data from Hofstede (2001)'s study. The combination of data from different sources together with our focus on variables measuring factual data in multiple years addresses several issues associated with survey measurement problems, including common method variance bias (Chang, van Witteloostuijn, & Eden, 2010; Podsakoff & Organ, 1986).[7]

Our unit of analysis is the individual project or "implementation" (in the ORN vocabulary)[8] in the MNE's GVC, which is defined as the location of a particular ATS function in a given host country in a specific year. The sample used in this study includes data on the geographical reconfiguration trajectory of 223 firms (343 data points).

Of these 223 firms, 67 engaged in geographic reconfiguration and 117 did not follow any action after their initial offshoring implementation (Figure A1 in the appendix provides a detailed breakdown of the use of the data included in this study). Most firms included in the sample are headquartered in the United States and Western Europe and a few in Asia and Australia (see Table A1 for a detailed breakdown of firms and projects developed). Company size, measured in terms of the number of employees, is distributed rather evenly between large firms (more than 10,000 employees), medium-size firms (500–10,000 employees), and small firms (less than 500 employees) where the three groups approximately made up one third each (Table A2 shows project distribution by category). The sample covers multiple industry sectors

such as services (28%), finance, banking and insurance (16%), high tech and software (17%) among several others (Table A3 shows distribution of firms and projects by industry sector).

By the type of project, our dataset is distributed as follows: information technology operations (ITO, 43%), business processes operations (BPO, 36%), and knowledge processes operations (KPO, 21%; Table A4 shows project distribution by business area and function). Regionally, the ATS projects have been performed in 42 countries around the globe (Table A5 shows the project distribution by region and large countries).

4.1 | Dependent variable: relocation of a function to a new country

The dependent variable measures when an MNE that has GVC operations in a country other than its home country seeks a new country location for its existing ATS activities. This variable is coded as a dichotomous dummy variable that is assigned a value of 1 when the firm develops an implementation in a different country and a value of 0 otherwise.[9]

Prior studies (e.g., Haleblian & Finkelstein, 1999) stress the importance of analyzing intertemporal behaviors not only over identical operations but across nonidentical operations that are similar in at least one dimension (e.g., activity, country, size), as the relatedness of experiences produces relevant information, which shapes follow-up actions. In the case of geographical GVC reconfiguration, we follow this principle by only considering subsequent ATS activities occurring within the same business area (ITO, BPO, KPO).[10] Hence, we assign a code of 1 if: (i) the company develops an implementation of the same activity (e.g., IT infrastructure support) in a new location (e.g., new country) in a follow-up period, or (ii) the company develops an implementation of related activities (e.g., software R&D) that rely on the same business area (e.g., ITO processes) as the original activities.[11] We assign a code of 0 when: (i) there are no follow-up activities, (ii) when activities are launched in countries in which the firm has already developed ATS activities in the same business area, or (iii) when the activities launched in the new country belong to a different business area than those already developed by the MNE.

Organization and strategy studies have also suggested that recent operations are more valuable to organizations than past operations (Baum & Ingram, 1998). To incorporate this consideration into our measurement strategy, we focus on MNEs' early reconfigurations of service activities. By focusing exclusively on a firm's first and second operational steps, we not only stress closely linked internationalization events, but also avoid attribution problems when it is necessary to evaluate to what extent each of the steps (and their correspondent learning experiences) influenced certain outcomes. Regarding the measurement, a "step" includes all the offshoring operations performed in a given calendar year. In the data, the average time between steps is 2.68 years, with a standard deviation (*SD*) of 2.16 years and a range of 1–11 years.

4.2 | Independent variables

4.2.1 | Negative performance gap

The extant literature uses two basic methodologies to measure performance gaps: The first approach, which is applied when performance records are publicly available, centers on evaluating financial goal fulfillment by either comparing the current period with the firm's historical performance (e.g., moving averages of past periods) or comparing the firm to group variables

(e.g., industry averages), such as return on assets, return on equity, or return on sales (e.g., Greve, 1998; Lant, 1992). The second approach, which we adopt, involves the use of survey questions to obtain nonpublic information. This approach is consistent with previous research in IB (e.g., Petersen, Pedersen, & Lyles, 2008). In this study, the proposed measure compares the extent to which firms achieve savings above or below their goals in their initial offshoring project. It is calculated using the following formula[12]:

$$\text{Financial goal fulfillment} = (\%\ \text{of cost savings actual}) - (\%\ \text{of cost savings expected}) \quad (1)$$

Since, our study analyzes the implications of negative PF only, we create a new variable from the financial goal fulfillment described in the equation above. The variable called "negative performance gap" focuses exclusively on the occasions where the firm's expectations are above attained levels. Negative performance gap adopts the absolute value of the financial goal fulfillment equation when a project does not fulfill the firm's expectations, and the value of 0 when savings achieved by a project are equal or superior to firm's expectations. Absolute values are adopted to have a simpler interpretation of the regression coefficients (Table A6 presents descriptive statistics on this variable and its components). This approach is consistent with previous analyses on PF literature (e.g., Vidal & Mitchell, 2015).

We adopt project savings as a relevant measure of project performance because we focus on GVC activities that are relocated with the objective of achieving superior efficiency, as opposed to activities relocated for market-seeking purposes or to gain access to natural resources. The achievement of greater efficiency in terms of cost savings is consistently described in the literature as the single greatest motivation reported by firms pursuing GVC relocation (Dossani & Kenney, 2007; Manning, Massini, & Lewin, 2008). In our dataset, cost reduction (an efficiency-seeking mechanism) is a central motivation behind the focal projects.[13] Regarding our measure, the ORN Corporate Client Survey is the source of data on both the achieved and targeted cost savings. Cost savings are measured as the improvement in the target activity (in percentage terms) during the last fiscal period before the survey, while the targeted cost savings is the target established by the MNE before the activity is exercised.

4.2.2 | Large host country

This dichotomous variable indicates whether the location selected for a given implementation is a large country. A large country offers multiple alternatives (e.g., geographical regions, resource combinations, and service providers) that can be selected by an MNE, while smaller countries are limited in this regard. In the case of ATS activities, India and China stand out as the largest host countries. Both countries have continent-size population, the availability of regions, and a large number of firms operating in them.[14] Hence, the dichotomous dummy variable is set equal to 1 if the location selected for the initial implementation is India or China and equal to 0 if the focal implementation was located in another country.

4.2.3 | Multi-country GVC structure

This variable seeks to identify the dynamics of an MNE's GVC expansion. The extant literature describes internationalization trajectories as either "toe in the water" paths or "concentrated

internationalization bursts" (Maitland, Rose, & Nicholas, 2005, p. 435). These trajectories involve different architectures (Vermeulen & Barkema, 2002) and reflect the MNE's ability to deal with complementary local assets (Hennart, 2009). We thus model a multi-country GVC structure adopted by the firm in the initial year as a dichotomous binary variable. A value of 0 is assigned if the MNE started its GVC in a *single* foreign country and a value of 1 if the MNE relocated activities to *multiple* countries during its first year of GVC operations.[15]

4.2.4 | Outsourcing

This variable indicates whether the observed ATS function operates as an outsourced or in-house function. This measure takes a value of 0 when the function is handled in-house (i.e., by wholly-owned subsidiaries/in-house service centers) and a value of 1 when the function is outsourced (i.e., performed by a third-party vendor; that is, in our context, a service provider).

4.3 | Control variables

We control for several variables that are expected to influence across- or within-country reconfiguration decisions. First, we include a control for *firm size*, as this variable is likely to affect the proclivity of a firm to develop multiple ATS projects. Firm size is measured as the natural logarithm of the firm's number of employees in the firm's home market. Second, we include a dichotomous variable that indicates whether the MNE has a general offshoring strategy that guides its decisions across divisions and functions. This variable is named "Firm possesses an offshore strategy" and is equal to 1 if the firm has indicated such strategy is in place. Previous studies have found a statistically significant relationship between strategy and offshoring performance (Massini et al., 2010). In this regard, we want to make the relation between the existence of a strategy and the trajectory of international sourcing activities explicit. Third, we include a variable that controls for the time elapsed between the point of the project activity—the implementation—and the year of the survey (variable name: *report interval*). This variable seeks to control for those cases in which a subsequent project is not observed due to right censoring. Fourth, our analysis incorporates country-level controls to capture the impact of differences among locations. On the one hand, we included a group of host-country dummy variables to capture effects that are mainly tied to project locations. On the other hand, we include the variable *Wage ratio* that is calculated as the wage in the home country divided by the wage in the host country. This is used to separately capture efficiency-driven expansion paths. This variable was constructed by dividing the GDP per person employed in the host country by the GDP per person employed in the home country (both at constant 1999 purchase power parity), with data obtained from the ILO.[16] Other country-level variables, such as the stability of the institutional environment and education levels, were considered in the robustness checks but were removed from the regression because of very high correlations with country wage level. Fifth, we include an indicator variable called *Late offshoring adopters* to differentiate between early and late adopters of the offshoring practice. The period under analyses (1995–2012) spans significant changes in the structure of the practice (Manning et al., 2018) and the growth and consolidation of the service providers industry that has driven an increased selection of outsourcing models (Manning et al., 2015) that together, affected the global distribution of offshoring operations. Hence, the variable *Late offshoring adopters* identifies all firms

whose initial offshoring project occurred after 2004. This date is consistent with the one used in other studies using ORN data (Manning et al., 2015; Manning et al., 2018). Analyzing whether the differences in the governance choices for ATS projects among early and late adopters' impact geographical reconfiguration is relevant as there are external environmental dynamics driving a shift from a large participation of in-house projects in the initial years towards a larger percentage of outsourced projects in the later years. (Table A7 shows information on the number of ATS projects developed by year and their governance mode). Sixth, we have included industry controls to identify the industry in which the firm is operating. Three categories are included *Service Industry (1 = yes)*, *Financial Industry (1 = yes)* and *Manufacturing (omitted)*. Seventh, we included *cultural distance (home-host)* variable. This variable has been derived from the five cultural dimensions of Hofstede's study: power distance, individualism, uncertainty avoidance, masculinity/feminity, and confusion dynamism (Hofstede, 2001). The construction of this variable has followed the methodology suggested by Kandogan (2012).

4.4 | Statistical analysis

We tested our hypothesis using two different models. Hypothesis (H1) is tested using a maximum likelihood probit model. The testing of Hypotheses (H2)–(H4) includes not only the use of the probit model, but also a switching regression model with endogenous treatment status under a full maximum likelihood estimation (Maddala, 1986; Wooldridge, 2002).[17] Switching regression models, or two-stage Heckman models as they are also known, are a widely applied technique in the IB and strategy literature to deal with self-selection threats (Shaver, 1998; Weigelt, 2013; Xu, Hitt, & Miller, 2020). All models are corrected with White–Huber sandwich estimators to account for clustered observations (Wooldridge, 2002). We include cluster-robust standard errors at the firm level to account for potential heteroskedasticity across multiple implementations adopted simultaneously by the same firm.

In the case of Hypotheses (H2)–(H4), we add estimations using switching regression models because there is a potential risk of endogeneity in the statistical estimation when analyzing nonrandom firm choices (Hamilton & Nickerson, 2003). Firm decisions to enter a large or small country, to adopt a single country entry or multiple simultaneous country entries, or to implement in-house or outsourced operations, are nonrandomly adopted and instead selected depending on its expected outcomes (Shaver, 1998). Self-selection represents an internal validity threat as it can lead to biased parameters, which potentially could lead to incorrect conclusions with regard to the veracity of the hypothesis (Clougherty, Duso, & Muck, 2016).

The application of switching regression models to test and correct for endogeneity involves two stages. In the first stage (also referred to as the selection model), we use instrumental variables to predict estimated values for the variable deemed to be affected by endogeneity concerns. In the second stage, we use the first-stage estimates to estimate the regression after controlling for self-selection effects. We identified instrumental variables for each of the hypothesized relationships in Hypotheses (H2)–(H4).

The process of selection of instrumental variables was led by theoretical considerations. We ensured that the selected instruments were highly correlated with the endogenous variable and presented a low correlation with our dependent variable (Wooldridge, 2002). The instruments used for the independent variables are the following:

As instrumental variables for "large country" we used two indicator variables that reflect the focal MNE's motivation to internationalize its GVC. Our logic is that the more important

cost savings and talent access are for the MNE, the less important is the size of the host country since the MNE would not have market access as a central motivation for its internationalization. The importance of cost savings and talent access as a motivation for the MNE to offshore a project are both measured on a five-point Likert scale. The higher the value on the Likert scale the more important are cost savings or talent access as project motives.

As instruments for "multiple country GVC strategy" we used three indicator variables. The first is the importance of talent access as the MNE's motivation to internationalize its sourcing. Research shows that firms are likely to tap into talent pools of emerging economy countries—in particular accessing science and engineering personnel that are difficult or expensive to hire in developed countries (Manning et al., 2008). Our logic is that MNEs are more eager to target multiple countries when their offshoring is driven by a need for people with skill sets that are in short supply at home. The second variable refers to the average level of standardization of certain activities. We presume that standardized operations are easier to relocate in multiple countries than are non-standardized, idiosyncratic operations. We take this variable from the ORN Service Provider Survey, where the variable was originally captured as a 1–5 Likert type indicator referring to activities with very low and very high degrees of standardization. To include the variable in our analyses we input an average level of standardization in the Service Provider Survey for each of the 12 business functions included in the analyses.

The third variable focuses on the level of specific investments (e.g., customized equipment, specific knowledge) required to develop a particular activity. The logic adopted here is that activities requiring considerable specific investments to be undertaken are less likely to move across different locations. Similar to the previous variable, the ORN Service Provider Survey measures specific investments on a Likert scale where activities requiring insubstantial and substantial specific investments are assigned low and high scale values, respectively, and we are using the average level of specificity by each of the 12 business functions included.

For the "outsource decision" we adopt three instrumental variables. First, the specific investments Likert indicator variable mentioned in the previous paragraph. This variable (specific investments variable) incorporates two dimensions of the asset-specificity concept: Physical asset specificity and human asset specificity (Williamson, 1985).

Second, we use a business process colocation indicator variable that incorporates the geographical dimension of asset specificity—often referred to as "site specificity" (Williamson, 1985). It measures the degree to which colocation with existing operations was important in the selection of an ATS function's particular location and governance mode. This variable, which is captured in the ORN Corporate Client Survey, is also measured by use of a five-point Likert scale.

Third, the geographical distance indicator variable reflects distance, which is presented as the natural log of thousands of kilometers between pairs of countries. Geographical distance has been identified as significant in the adoption of a given governance mode, as distance creates different types of uncertainties that some governance modes are better than others to deal with (Gooris & Peeters, 2014). The calculation of distance includes dyads of countries, and uses the latitudes and longitudes of the most populous cities/agglomerations in each country as reference points (Mayer & Zignago, 2011).

5 | RESULTS

Descriptive statistics, correlations, and variance inflation factors (VIFs) are presented in Table 1. The low correlation between the independent variables suggests that there are no

TABLE 1 Descriptive statistics, correlations, and variance inflation factors (VIFs) ($N = 343$ projects in 223 firms.)

Variable name	New Country Relocation (1 = yes) (1)	Negative performance gap (2)	Outsourcing (1 = yes) (3)	Large host country (1 = yes) (4)	Multi-country GVC structure (1 = yes) (5)	Firm possesses an offshore strategy (1 = yes) (6)	Firm size (log) (7)	Wage ratio (home country/ host country) (8)	Report interval (9)	Service Industry (1 = yes) (10)	Financial Industry (1 = yes) (11)	Late offshoring adopters (after 2004) (12)	Cultural distance (Home-Host) (13)	Cost savings motivation (5 = very high) (14)	Talent motivation (5 = very high) (15)	Task standardization (16)	Specific investments (17)	Business Process Colocation (18)	Geographical distance (home-host) (19)
(1) New Country Relocation (1 = yes)	1.000																		
(2) Negative performance gap	−.093	1.000																	
(3) Outsourcing (1 = yes)	.083	.089	1.000																
(4) Large host country (1 = yes)	−.183	.068	.171	1.000															
(5) Multi-country GVC structure (1 = yes)	.428	−.034	.048	−.089	1.000														
(6) Firm possesses an offshore strategy (1 = yes)	−.213	.015	.052	.118	−.129	1.000													
(7) Firm size (log)	.170	−.022	.153	.211	.192	.095	1.000												
(8) Wage ratio (home country/host country)	.167	−.030	−.250	−.755	.004	−.076	−.215	1.000											
(9) Report interval	.340	−.018	−.054	−.100	.146	.096	.120	.021	1.000										
(10) Service Industry (1 = yes)	−.039	.079	−.039	−.014	−.097	−.001	−.400	−.060	−.163	1.000									
(11) Financial Industry (1 = yes)	.005	−.061	.144	.135	−.052	.097	.311	−.088	−.046	−.466	1.000								
(12) Late offshoring adopters (after 2004)	−.293	.051	.094	.097	−.127	.168	−.065	−.009	−.635	.055	−.033	1.000							
(13) Cultural distance (home-host)	−.018	−.033	.024	−.194	.053	.054	−.075	.029	−.045	−.049	−.058	.077	1.000						
(14) Cost savings motivation (5 = very high)	−.102	.092	.150	.303	.103	.087	.150	−.497	−.044	−.032	.109	.043	.045	1.000					
(15) Talent motivation (5 = very high)	−.030	−.175	.117	.204	−.040	.082	.148	−.151	−.046	−.107	.113	.029	−.181	.150	1.000				
(16) Task standardization	.050	.060	.034	−.099	.125	−.023	.234	.025	−.087	−.070	.060	.008	.013	.110	−.002	1.000			

TABLE 1 (Continued)

Variable name	New Country Relocation (1 = yes) (1)	Negative performance gap (2)	Outsourcing (1 = yes) (3)	Large host country (1 = yes) (4)	Multi-country GVC structure (1 = yes) (5)	Firm possesses an offshore strategy (1 = yes) (6)	Firm size (log) (7)	Wage ratio (home country/ host country) (8)	Report interval (9)	Service Industry (1 = yes) (10)	Financial Industry (1 = yes) (11)	Late offshoring adopters (after 2004) (12)	Cultural distance (Home-Host) (13)	Cost savings motivation (5 = very high) (14)	Talent motivation (5 = very high) (15)	Task standardization (16)	Specific investments (17)	Business Process Colocation (18)	Geographical distance (home-host) (19)
(17) Specific investments	−.019	.026	.124	.019	−.124	−.012	.006	−.091	.038	.056	.027	−.074	−.119	.005	.096	−.123	1.000		
(18) Business Process Colocation	.080	−.154	−.230	−.061	.034	.068	.029	.121	.109	−.114	−.078	−.179	−.114	−.086	.073	−.067	−.019	1.000	
(19) Geographical distance (home-host)	−.065	.083	.219	.511	.071	.118	.242	−.645	.002	.064	.105	.028	−.093	.484	.139	.041	−.003	−.039	1.000
Mean	0.33	8.68	0.59	0.54	0.17	0.30	7.06	9.23	4.25	0.57	0.14	0.41	2.53	4.13	4.06	3.21	2.93	3.14	8.76
Standard deviation	0.47	14.65	0.49	0.50	0.37	0.46	3.29	0.76	3.42	0.50	0.35	0.49	0.76	1.06	0.90	0.28	0.18	1.51	1.03
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.69	8.28	−1.00	0.00	0.00	0.00	0.36	1.00	1.00	2.68	2.39	1.00	5.15
Max	1.00	100.00	1.00	1.00	1.00	1.00	12.74	11.07	16.00	1.00	1.00	1.00	4.44	5.00	5.00	3.63	3.32	5.00	9.85
VIF		1.11	1.21	2.90	1.14	1.23	1.54	3.85	2.02	1.69	1.51	2.02	1.19	1.54	1.19	1.19	1.11	1.20	2.06

Note: Correlations of >|.1| are significant at $p < .05$. Variables "'Task Standardization" and "Specific Investments" are inputed as their average level for each of the 12 business functions included. Therefore, their range is not 1–5 as in the original instrument (ORN Service Provider Survey).

potential multicollinearity problems, as it is well below the standard threshold of 0.5 (Hair, Anderson, Tatham, & Black, 1998). Table 1 presents one exception to this threshold, which is the correlation between the instrumental variable "geographical distance" included in the first stage testing of Hypothesis (H4) and the second stage variable "large host country" included in the second stage testing. That correlation does not create issues in the regressions as the variables involved are included in different models. A separate check of multicollinearity included an examination of VIF values, even the ones not simultaneously presented in the same equations. Since the mean VIF value is 1.65 and the highest VIF (3.85) is well below the criterion of 5.0, this suggests no problems of multicollinearity in the dataset (Hair et al., 1998).

5.1 | Evaluation of responses to negative performance gaps

Table 2 tests the proclivity of MNEs to relocate ATS projects following negative goal fulfillment, as suggested by Hypothesis (H1). In this table, Model 1 and 2 present the results of the probit model with clustered robust standard errors (CRSE).

Table 2 presents the results of our test of Hypothesis (H1). The binary probit model presented in Model 2 shows a negative and statistically significant coefficient for the underperforming project variable: $\beta = -.021; p = .010; CI = [-.038, -.005]$. The result confirms that negative performance gaps affect MNEs' geographical reconfiguration of their GVCs, but in a counterintuitive way. The negative coefficient indicates that MNEs experiencing negative performance gaps are *less* likely to engage in geographical reconfiguration. However, a close examination of the coefficients of the dichotomous variables in the same regression suggests that the inclination to undertake geographical reconfiguration is significantly dependent on MNEs' decisions as to whether they locate in small or large countries ($\beta = 3.630; p = .008; CI = [0.939, 6.322]$), adopt a single- or multi-country GVC structure ($\beta = 1.572; p = .000\ CI = [0.879,\ 2.265]$), or use captive or outsourced operation modes ($\beta = .647; p = .005; CI = [0.197, 1.097]$).

The *p*-values found in Table 2's Model 2 suggest that in order to obtain a clear understanding of MNEs' geographical search behavior in relation to underperforming projects, one has to take into consideration prior decisions inasmuch as they may affect the subsequent geographical reconfiguration undertaken by the MNEs.

Table 3 adds some nuance to our understanding of MNEs' geographical reconfiguration by presenting the results of our test of Hypothesis (H2). Model 1 presents the base probit model and Model 2 the test of the hypothesis under the binary probit model, while Model 3 presents the endogenous treatment regression model that is used to address self-selection effects. For this test, we use the results of Model 2 because the Lambda value, corresponding to the Inverse Mills Ratio has a *p*-value of .105, indicating that we have no evidence of self-selection effects (endogeneity) in the analysis. Model 2 suggests strong support for the proposition that operations in large countries that experience negative performance gaps are less likely to be moved to other countries compared to ailing operations in small countries ($\beta = -.064; p = .000; CI = [-.099, -.0293]$). Hence, Hypothesis (H2) is supported. To obtain a better comparison of the coefficients we transformed the coefficients of the probit model variables to show their marginal effects. The comparison shows that operations in a large host country modifies by −.01 the effect of negative performance gap over the likelihood of geographical relocation, while location in a smaller host country poses an effect of .002. This implies that, all else equal, the size of the host country for a focal project facing a negative performance gap of 20%, will turn into a net average difference of 24% in the probability of relocating to a new country.

TABLE 2 Effects of underperformance on new country relocation

	Model 1		Model 2	
	Base probit		Probit model	
Test of Hypothesis (H1)	***β/p***	***SE***	***β/p***	***SE***
H1: Negative performance gap (0/1)			−0.021	[0.008]
			(.010)	
Outsourcing (1 = yes)	0.576	[0.226]	0.647	[0.230]
	(.011)		(.005)	
Multi-country GVC structure (per.1/1 = yes)	1.562	[0.343]	1.573	[0.354]
	(.000)		(.000)	
Large host country (1 = yes)	3.194	[1.318]	3.630	[1.373]
	(.015)		(.008)	
Firm possesses an offshore strategy (1 = yes)	−0.711	[0.243]	−0.675	[0.235]
	(.003)		(.004)	
Firm size (log)	0.086	[0.044]	0.096	[0.045]
	(.053)		(.035)	
Wage ratio (home country/host country)	0.807	[0.388]	0.888	[0.400]
	(.038)		(.026)	
Report interval	0.188	[0.044]	0.204	[0.046]
	(.000)		(.000)	
Service Industry (1 = yes)	0.634	[0.281]	0.696	[0.274]
	(.024)		(.011)	
Financial Industry (1 = yes)	0.220	[0.330]	0.214	[0.326]
	(.505)		(.512)	
Late offshoring adopter (after 2004)	−0.156	[0.276]	−0.099	[0.273]
	(.573)		(.717)	
Cultural distance (home-host)	−0.413	[0.231]	−0.480	[0.245]
	(.074)		(.050)	
Constant	−11.022	[4.431]	−12.038	[4.583]
	(.013)		(.009)	
Number of observations	343.00		343.00	
Log Likelihood	−129.91		−126.50	
chi2	110.65		115.61	
Country dummies	Yes		Yes	
Clustered at the firm level	Yes		Yes	

Note: Standard errors in brackets, *p*-values in parenthesis.

Table 4 presents the results of our test of Hypothesis (H3). Models 1 and 2 present the binary probit estimation, while Model 3 presents the endogenous treatment two-step routine for endogenous covariates. We use the results of Model 2 as the lambda value (Inverse Mills ratio)

TABLE 3 Effects of underperformance and host country size on new country relocation

	Model 1		Model 2		Model 3	
	Base probit		Probit model		Switching regression (FIML)	
Test of Hypothesis (H2)	***β*/*p***	***SE***	***β*/*p***	***SE***	***β*/*p***	***SE***
Estimation model						
H1: Negative performance gap (0/1)	−0.021	[0.008]	0.008	[0.010]	0.001	[0.003]
	(.010)		(.461)		(.627)	
H2: Neg. perf. gap × large host country			−0.064	[0.018]	−0.006	[0.004]
			(.000)		(.125)	
Outsourcing (1 = yes)	0.647	[0.230]	0.664	[0.238]	0.108	[0.047]
	(.005)		(.005)		(.021)	
Multi-country GVC structure (per.1/1 = yes)	1.573	[0.354]	1.656	[0.354]	0.458	[0.166]
	(.000)		(.000)		(.006)	
Large host country (1 = yes)	3.630	[1.373]	4.018	[1.368]		
	(.008)		(.003)			
Firm possesses an offshore strategy (1 = yes)	−0.675	[0.235]	−0.652	[0.242]	−0.162	[0.045]
	(.004)		(.007)		(.000)	
Firm size (log)	0.096	[0.045]	0.101	[0.047]	0.012	[0.011]
	(.035)		(.033)		(.273)	
Wage ratio (home country/ host country)	0.888	[0.400]	0.878	[0.414]	0.201	[0.088]
	(.026)		(.034)		(.022)	
Report interval	0.204	[0.046]	0.211	[0.047]	0.051	[0.012]
	(.000)		(.000)		(.000)	
Service Industry (1 = yes)	0.696	[0.274]	0.688	[0.281]	0.134	[0.061]
	(.011)		(.014)		(.029)	
Financial Industry (1 = yes)	0.214	[0.326]	0.126	[0.347]	0.097	[0.075]
	(.512)		(.717)		(.199)	
Late offshoring adopter (after 2004)	−0.099	[0.273]	−0.223	[0.288]	0.022	[0.069]
	(.717)		(.438)		(.748)	
Cultural distance (home-host)	−0.480	[0.245]	−0.500	[0.229]	−0.108	[0.064]
	(.050)		(.029)		(.089)	
Large host country (1 = yes) = 1					0.145	[0.568]
					(.799)	

TABLE 3 (Continued)

Test of Hypothesis (H2)	Model 1 Base probit β/p	Model 1 Base probit SE	Model 2 Probit model β/p	Model 2 Probit model SE	Model 3 Switching regression (FIML) β/p	Model 3 Switching regression (FIML) SE
Constant	−12.038	[4.583]	−12.058	[4.734]	−1.811	[0.953]
	(.009)		(.011)		(.058)	
Selection model: large host country (1 = yes)						
Cost savings motivation					0.279	[0.126]
					(.027)	
Talent access motivation					0.118	[0.105]
					(.263)	
Constant					−1.522	[0.813]
					(.061)	
Correction for self-selection (lambda λ)					1.394	[0.860]
					(.105)	
Number of observations	343.00		343.00		343.00	
Log likelihood	−126.50		−120.30		−336.56	
chi2	115.61		117.44		602.61	
Country dummies	Yes		Yes		Yes	
Clustered at the firm level	Yes		Yes		Yes	

Note: Standard errors in brackets, *p*-values in parenthesis.

has a *p*-value of .132, suggesting no self-selection effects in the dataset as concerns the focal MNE's GVC structure. The coefficient of the interaction of multi-country GVC structure and negative performance gaps in Model 2 $(\beta = .046; p = .081; CI = [-.005, -.0985])$ lend support—though somewhat weak—to Hypothesis (H3) saying that MNEs with initial operations in a sole country are less likely to start new operations in another country following a negative performance gap.

A transformation of the coefficients of the probit variables in Model 2 in order to show their marginal effects suggests that at the *p*-level of .08, a GVC structure involving many locations modifies by −.004 the effect of negative performance gap over the probability of a geographical relocation into new countries, while a single country GVC structure poses an effect of .005. This implies that, all else equal, the presence of a multi-country GVC structure, for a focal project facing a negative performance gap of 20%, will turn into a net average difference of 18% in the probability of relocating to a new country.

The results of our test of Hypothesis (H4) are presented in Table 5. We use Model 3 as the Inverse Mills ratio indicates that the selection of an in-house or outsourcing operation mode influences the second-stage decision ($p = .01$). Model 3 suggests that MNEs with outsourced ATS functions that experience negative performance gaps are less likely than MNEs with in-

TABLE 4 Effects of underperformance and multi-country GVC structure on new country relocation

	Model 1		Model 2		Model 3	
	Base probit		Probit model		Switching regression (FIML)	
Test of Hypothesis (H3)	***β*/*p***	***SE***	***β*/*p***	***SE***	***β*/*p***	***SE***
Estimation model						
H1: Negative performance gap	−0.021	[0.008]	−0.022	[0.009]	−0.004	[0.002]
	(.010)		(.019)		(.040)	
H3: Neg. perf. gap × multi-country GVC structure			0.046	[0.027]	0.009	[0.004]
			(.081)		(.042)	
Outsourcing (1 = yes)	0.647	[0.230]	0.479	[0.210]	0.117	[0.047]
	(.005)		(.023)		(.014)	
Multi-country GVC structure (per.1/1 = yes)	1.573	[0.354]	1.257	[0.396]		
	(.000)		(.002)			
Large host country (1 = yes)	3.630	[1.373]	3.311	[1.343]	0.639	[0.322]
	(.008)		(.014)		(.047)	
Firm possesses an offshore strategy (1 = yes)	−0.675	[0.235]	−0.695	[0.232]	−0.174	[0.048]
	(.004)		(.003)		(.000)	
Firm size (log)	0.096	[0.045]	0.093	[0.045]	0.015	[0.010]
	(.035)		(.039)		(.136)	
Wage ratio (home country/host country)	0.888	[0.400]	0.713	[0.388]	0.218	[0.082]
	(.026)		(.066)		(.008)	
Report interval	0.204	[0.046]	0.195	[0.043]	0.049	[0.011]
	(.000)		(.000)		(.000)	
Service Industry (1 = yes)	0.696	[0.274]	0.509	[0.254]	0.142	[0.060]
	(.011)		(.045)		(.018)	
Financial Industry (1 = yes)	0.214	[0.326]	0.082	[0.317]	0.043	[0.074]
	(.512)		(.796)		(.560)	
Late offshoring adopters (after 2004)	−0.099	[0.273]	−0.158	[0.263]	−0.008	[0.062]
	(.717)		(.549)		(.898)	
Cultural distance (home-host)	−0.480	[0.245]	−0.467	[0.249]	−0.070	[0.054]
	(.050)		(.061)		(.194)	
Multi-country GVC structure (per.1/1 = yes) = 1					0.295	[0.129]
					(.022)	
Constant	−12.038	[4.583]	−9.710	[4.439]	−2.318	[0.863]

TABLE 4 (Continued)

Test of Hypothesis (H3)	Model 1 Base probit β/p	SE	Model 2 Probit model β/p	SE	Model 3 Switching regression (FIML) β/p	SE
	(.009)		(.029)		(.007)	
Selection model: multi-country GVC structure (per. 1/1 = yes)						
Specific investments					−1.046	[0.493]
					(.034)	
Task standardization					0.539	[0.421]
					(.200)	
Talent motivation					−0.098	[0.113]
					(.384)	
Constant					0.730	[1.974]
					(.712)	
Correction for self-selection (lambda λ)					0.172	[0.114]
					(.132)	
Number of observations	343.00		343.00		343.00	
Log likelihood	−126.50		−132.27		−274.12	
chi2	115.61		120.31		243.90	
Country dummies	Yes		Yes		Yes	
Clustered at the firm level	Yes		Yes		Yes	

Note: Standard errors in brackets, *p*-values in parenthesis.

house operations to seek new country locations ($\beta = -.006; p = .03; CI = [-.012, -.001]$). Moreover, the identification of self-selection effects regarding operation mode is consistent with other IB studies (Shaver, 1998; Xu et al., 2020).

We transformed the switching regression in Model 3 to understand better their effect size. There we find that an outsourced project modifies by −.004 the effect that negative performance gaps have on the likelihood of geographical relocation to new countries, while the use of an in-house project modifies by .002 the effect of a negative performance gap. This implies that, all else equal, a difference in the governance mode (in-house vs. outsourced) in an ATS project with a negative performance gap of 20% will result in an average difference of 12% as regards the probability of relocating to a new country.

5.2 | Additional analyses and robustness checks

To explore the relations further, we tested several variations of our empirical models. Our robustness checks included additional control variables, alternative model specifications, endogeneity verifications, and alternative measures of performance.

TABLE 5 Effects of underperformance and governance mode on new country relocation

	Model 1		Model 2		Model 3	
	Base probit		Probit model		Switching regression (FIML)	
Test of Hypothesis (H4)	***β*/*p***	***SE***	***β*/*p***	***SE***	***β*/*p***	***SE***
Estimation model						
H1: Negative performance gap	−0.021	[0.008]	0.010	[0.010]	0.002	[0.002]
	(.010)		(.318)		(.259)	
H4: neg. perf. gap × outsourcing			−0.055	[0.015]	−0.006	[0.003]
			(.000)		(.034)	
Outsourcing (1 = yes)	0.647	[0.230]	1.070	[0.275]		
	(.005)		(.000)			
Multi-country GVC structure (per. 1/1 = yes)	1.573	[0.354]	1.620	[0.356]	0.459	[0.094]
	(.000)		(.000)		(.000)	
Large host country (1 = yes)	3.630	[1.373]	3.752	[1.270]	0.782	[0.343]
	(.008)		(.003)		(.023)	
Firm possesses an offshore strategy (1 = yes)	−0.675	[0.235]	−0.692	[0.233]	−0.181	[0.044]
	(.004)		(.003)		(.000)	
Firm size (log)	0.096	[0.045]	0.107	[0.046]	0.020	[0.010]
	(.035)		(.019)		(.046)	
Wage ratio (home country/host country)	0.888	[0.400]	0.960	[0.386]	0.211	[0.079]
	(.026)		(.013)		(.007)	
Report interval	0.204	[0.046]	0.218	[0.045]	0.057	[0.012]
	(.000)		(.000)		(.000)	
Service Industry (1 = yes)	0.696	[0.274]	0.697	[0.274]	0.161	[0.057]
	(.011)		(.011)		(.004)	
Financial Industry (1 = yes)	0.214	[0.326]	0.107	[0.334]	0.075	[0.071]
	(.512)		(.748)		(.293)	
Late offshoring adopters (after 2004)	−0.099	[0.273]	−0.021	[0.275]	0.062	[0.063]
	(.717)		(.940)		(.329)	
Cultural distance (home-host)	−0.480	[0.245]	−0.504	[0.237]	−0.090	[0.052]
	(.050)		(.033)		(.084)	
Outsourcing (1 = yes) = 1					−0.394	[0.117]
					(.001)	
Constant	−12.038	[4.583]	−13.159	[4.443]	−2.146	[0.825]
	(.009)		(.003)		(.009)	

TABLE 5 (Continued)

Test of Hypothesis (H4)	Model 1 Base probit β/p	Model 1 Base probit SE	Model 2 Probit model β/p	Model 2 Probit model SE	Model 3 Switching regression (FIML) β/p	Model 3 Switching regression (FIML) SE
Selection model: outsourcing (1 = yes)						
Specific investments					0.356	[0.282]
					(.207)	
Geographical distance (home-host)					0.321	[0.069]
					(.000)	
Business process colocation					−0.140	[0.052]
					(.007)	
Constant					−3.179	[0.999]
					(.001)	
Correction for self-selection (lambda λ)					1.164	[0.289]
					(.000)	
Number of observations	343.00		343.00		342.00	
Log likelihood	−126.50		−121.61		−331.19	
chi2	115.61		116.48		437.71	
Country dummies	Yes		Yes		Yes	
Clustered at the firm level	Yes		Yes		Yes	

Note: Standard errors in brackets, *p*-values in parenthesis.

First, we have assessed alternative constructions of the Negative Performance Gap variable. Firms may be more inclined to relocate when they attain a negative performance gap, but the functional form used by the decision makers may incorporate other elements in addition to the difference between the goals and actual attainment in terms of project savings. Hence, two additional functional estimations (ratios) combining savings expected and achieved have been tested. One of these ratios includes the negative performance gap divided by the savings expected and the second one includes the financial goal fulfillment divided by savings expected. These alternative forms maintain a high correlation with the Negative Performance Gap (correlations above 80%), hence these were not included concurrently with the main equation. With the alternative definition of the main independent variable, there was no change in the models, as the directions and the significances remain consistent across the four hypotheses with the alternative specification.[18]

Second, we assessed other environmental control variables that were not included in the final specification. For example, we included education levels by country to account for differences in resource quality. We also used the number of ISO-certified firms by country as a measure of quality with the aim of understanding differences among local environments that might affect geographical and functional reconfiguration patterns. However, we removed the variable on education levels by country due to its high multicollinearity with country-level wages. We

also removed the ISO certification by country variable owing to the lack of relevant data for the countries and years included in the dataset.

Third, we tested for function-specific effects (e.g., call centers, finance/accounting, engineering services, R&D). In general, we found that effects were not specific to ATS functions. Therefore, we removed them, as they did not improve the model specification or lead to significant differences.

Fourth, we tested alternative specifications to corroborate the model's robustness. We used linear square estimations (both regular and Heckman corrected) to ensure that the relationships held when using different statistical regression methods. Those tests indicate that the results of these alternative estimations are consistent with the ones obtained by using the probit and switching regression models.

Fifth, we examined whether MNEs responded to negative PF by reshoring (i.e., moving offshored operations back to the home country) instead of moving offshored operations to another foreign country. Some MNEs may bet on reshoring as an efficiency-increasing mechanism that not only reduces organizational complexity, but also allows for the use of new automation technologies (e.g., robotics, additive manufacturing) to enhance productivity (Bals, Daum, & Tate, 2015). Anecdotal experience suggests a link between reshoring and low-performing offshoring (Graf & Mudambi, 2005). We measured reshoring as our dependent variable using a dichotomous ORN variable that captured whether the MNE had plans to relocate an ailing ATS project back to its home country.[19] As our main IV, we used our negative performance gap variable along with the following control variables: Task characteristics (interdependence, standardization); general MNE characteristics (firm size, home country); and specific factors affecting a given operation (home-host country relative wages, access to expertise, cultural proximity, geographical proximity, colocation with existing manufacturing or service facilities. In this analysis, we found no significant correlations between the reshoring of ATS activities and negative feedback. This contrasts anecdotal evidence associating deficient cost-reductions with the return of GVC operations to the country of origin. It is possible that the reshoring phenomenon may have picked up in later years not covered by our data.

6 | DISCUSSION

Our study contributes to the literature on GVCs and global strategy (Larsen et al., 2013; Manning et al., 2018; Mudambi et al., 2018; Pananond et al., 2020; Strange & Humphrey, 2019), responding to calls for more research on the dynamic dimensions of GVCs, that is, how firms reconfigure their GVC (Ambos, Cesinger, Eggers, & Kraus, 2019; Benito et al., 2019), attempting to achieve efficient configurations (Cuervo-Cazurra et al., 2018; Verbeke & Kano, 2015). Empirical evidence also points to the challenges of "getting right" global sourcing decisions, and hence the frequent reconfigurations observed in the industry, which calls for more work on this subject (Benito et al., 2009).

We build on prior studies of resource reconfiguration, proposing that GVC reconfiguration is a form of entrepreneurial recombination addressing simultaneously the need to be flexible in a competitive market scenario, and the ability to respond to suboptimal settings linked to bounded rationality (Narula & Verbeke, 2015). We adopt PF theory to examine one of the possible types of GVC reconfiguration: relocation of offshored ATS to new countries.

We show that firms involved in global sourcing activities display the ability to engage in entrepreneurial action recombining the pieces of the puzzle that form the GVC, as argued by IB

scholars (Buckley & Casson, 2019; Kano, 2018). Consistent with PF theory, MNEs reconfigure their GVC in a corrective manner, when their operations perform below their aspirations. Failing to meet their aspired goals signals to firms that there is scope for improvement. This finding is consistent with the assumption of bounded rationality: Not meeting the aspired performance target could be the result of decision makers limited knowledge or mistaken evaluations, or failure to predict market changes. Our findings are also consistent with the idea that firms' competitiveness is linked to their engagement in organizational reconfigurations that allow adapting to changing conditions (Karim & Capron, 2016).

We further develop our theoretical framework by enriching PF theory with insights from problemistic search theory (e.g., Posen et al., 2018). We show that MNEs' search for solutions to negative PF is bounded by their prior decisions. Combining PF theory and problemistic search theory, we add nuance to our understanding of the mechanisms that influence the logics of geographical GVC reconfiguration. We identify moderating conditions that shape an MNE's search space when problems with specific GVC activities are detected. Specifically, we find that host-environment characteristics, GVC's prior structure, and governance modes influence GVC reconfiguration when performance fails to meet expectations. MNEs with projects in large countries are less likely to seek new country locations when they face negative performance gaps in their GVC activities, which demonstrates the influence of host-environment characteristics.

The idea of reconfiguration is that firms change the bundling of activities and locations in search for superior efficiency, for example by rectifying suboptimal decisions related to bounded rationality, or responding to changing circumstances (Narula & Verbeke, 2015). The larger the host country, the more possibilities to experiment with location-activities bundles within the same country. This was illustrated by the HSBC example (borrowed from Oshri, 2011) already alluded to. HSBC responded to changing host country conditions, in particular increasing wages in Mumbai, where it had established its Indian in-house operations. The company searched for more cost-efficient solutions within India, exploiting its host country knowledge and the fact that, being a large country, India offered much in-country variation in terms of wages and other cost drivers. The firm eventually relocated to Calcutta (now Kolkata) in 2005. The company's approach was to pursue labor cost arbitrage within the country through a network of in-house facilities in six different Indian cities combining tier one, two and three destinations (Oshri, 2011).

We thus interpret our finding as an important reminder that GVC reconfiguration can entail shifting activities across countries, but also within countries, especially when the countries in question are large and diverse, including different cost structures, skills availability, and even different taxation regimes, as is the case for India (Elango & Pattnaik, 2007). Our findings are thus consistent with research on how intra-country differences shape the location decisions of firms in large economies (e.g., Cordero & Miller, 2019).

We also find that MNEs configuring their GVC in a more geographically diversified manner, that is, with operations spanning a broader range of countries, are more likely to expand to new countries when they face negative performance gaps. This result confirms the prediction of problemistic search theory: The search for improvement is bounded by the prior choices of the firm and their current strategic domains. The more global the initial configuration of the firm's GVC, the more the firm will engage in reconfiguration in a way that is consistent with the IB literature description of "entrepreneurial recombination" as a higher order firm-specific advantage—the ability to recombine activities and host countries in the search for efficient configurations. MNEs that initially structure their activities in a less geographically diversified

GVC, on the contrary, engage in reconfiguration in a way that falls short of suggesting they have the ability to orchestrate and reshuffle activities across countries as described by IB scholars.

The essence of reconfiguration is the continuous search for efficient combinations of functions, local service providers (when functions are outsourced), governance modes and—in our case—locations (Mudambi et al., 2018). Limiting the search for improved combinations to fewer locations entails a higher dependence on these locations maintaining the country-location-specific advantages that made them attractive in the first place. It is thus possible that MNEs that reconfigure their GVC in a geographically bounded way in the long run will struggle to compete with MNEs that search for optimality within a broader range of locations as possible remedies for the GVC operations that experience negative performance gaps.

We find evidence that geographical search mechanisms are contingent on the governance mode of the ailing projects. As shown by Hypothesis (H4), MNEs with ailing in-house ATS projects are more likely to reconfigure the GVC by moving these activities to other countries than are MNEs with underperforming outsourced ATS projects. Moreover, the geographical search patterns of MNEs with ailing in-house ATS projects show that these firms do not necessarily reconfigure to host countries nearby the initial one. A considerable number of MNEs in this situation move operations significantly in terms of distance and time zones. In case of the ailing outsourced projects, subsequent ones tend to be opened in the same country.

The moderating effect of governance modes on GVC reconfiguration offers additional information on how firms use local search to address negative performance gaps. The starting point is the original decision, which involves joint consideration of control structures and locations for a given project (Manning et al., 2015; Mudambi & Venzin, 2010). When the outcome of that decision performs below aspirations, it triggers a search for solutions that incorporates all experience gained between the time of the initial decision and the moment when the MNE managers realized that there was a negative performance gap. That search may challenge the original decision. Notably, our study shows that additional experience does *not* challenge the original choice of governance mode. MNEs experiencing negative performance gaps in their in-house projects are decisively more prone to change geographies than firms that outsource their projects.

At the outset, this supports March and Simon's local search argument, which suggests that solutions are sought "in the vicinity of the problem's symptom and previously adopted actions" (Posen et al., 2018, p. 219). Our analysis helps refine two aspects of this notion. First, MNEs search for solutions in areas associated with recent experience (e.g., for an in-house activity, the experience involved in searching for a better firm-country fit is used to improve the MNE's location-selection strategy) rather than in a particular geography or known environment. Interestingly, the local search process transforms problems into sequential decision mechanisms by reducing the number of dimensions in the MNE´s search space (e.g., keeping governance decisions constant) when simultaneous optimization of locations and ownership modes seem very complex to analyze. Hence, local search helps directing decision makers' cognitive capacities to explore the remaining dimensions in more depth (e.g., MNEs with in-house ATS operations being able to explore locations across continents and time zones). With this, we corroborate the core argument that the entrepreneurial recombination is a higher order firm-specific advantage that allows the MNE to orchestrate dynamically a set of geographically dispersed activities that, together, form the GVC, as opposed to more basic advantages, such as knowledge of a discrete range of host markets.

7 | CONCLUSIONS

To the best of our knowledge, this is the first empirical study that examines GVC reconfiguration as a response to PF related to specific global sourcing operations. Our study sheds light on the circumstances under which MNEs reconfigure their GVC and how they search for solutions to performance shortfalls. We corroborate previous research arguing that to understand how firms reconfigure their GVC across geographical borders, MNE managers' decisions should be seen as being iterative rather than the results of one-off, discrete decisions (Benito et al., 2019). We thus bridge the arguments of global sourcing scholars (Benito et al., 2009; Jensen, 2009; Larsen et al., 2013; Manning et al., 2018) and GVCs researchers (Gereffi et al., 2005; Strange & Humphrey, 2019) with the mainstream IB contention that MNE managers adjust to contextual changes by engaging in entrepreneurial search for efficient GVC configurations (Buckley & Casson, 2019; Kano, 2018; Mudambi et al., 2018; Narula & Verbeke, 2015). Each piece of feedback on performance provides the decision makers with information that helps to reduce uncertainty and keeps the MNE on a trajectory towards an optimal configuration.

In these times, marked by severe GVC disruptions caused by a ravaging pandemic and geopolitical disturbances not seen since the era of the cold war (Ciravegna & Michailova, 2022; Cuervo-Cazurra et al., 2020; Gereffi et al., 2021), our study addresses an empirical and theoretical gap in the literature: Few studies examine empirically MNE managers' strategic adjustments of their GVCs as they respond to new information about operational performance (Benito et al., 2009; Sachse, 2011; Swoboda, Olejnik, & Morschett, 2011). With a focus on geographical reconfiguration in GVCs we adopted PF theory to examine MNE managers' response to negative PF. We argued that managers engage in problemistic search but tend to limit their search space due to cognitive limitations. We found empirical support for this argumentation: MNE managers search new locations in the vicinity of their current knowledge, practices and expertise. Only when a solution cannot be found in the vicinity of that existing knowledge do they move towards more distant search—in our case, the relocation of sourcing operations to new countries. Hence, we provided an affirmative answer to our research question: Does the relocation of underperforming GVC projects take place within a search space confined by decision makers' cognitive limitations?

In relation to the other research question addressed in this study—to what extent do MNEs move underperforming operations of their GVC projects to other countries?—we found that MNEs principally relocate ailing ATS projects when these are performed in-house. This suggests that when ATS projects are outsourced and performance disappoints, MNE decision makers would try out new local service providers rather than embark on geographical reconfiguration of the GVC. Regrettably, data limitations kept us from testing this supposition (see next section).

7.1 | Limitations of the study

Like most empirical analyses, this study also suffers from several limitations. First, as described in the dependent variable section, our measurement strategy included only information on the first and second round of geographical (re)configuration. While this strategy has the advantage of offering a cleaner view of the connections, it limits the model's ability to detect learning patterns that emerge after multiple reconfiguration rounds (Vivek, Banwet, & Shankar, 2008) and

the effects of the feedback process itself, as cycles of modification may alter the industry's structure (Jacobides & Winter, 2012). A second limitation relates to the risk of reporting bias in the independent variables (Miller, Cardinal, & Glick, 1997). This emerges due to the lack of a panel structure in the dataset, which implies that the reported answers were, on average, provided 4.3 years (*SD*: 3.4 years) after the initial ATS project ("implementation"). While panel data would have been ideal for comparing the initial configuration to subsequent reconfigurations, no such data were available. Third, our data allow for the testing of geographical reconfigurations but not for reconfigurations in the form of service provider shifts (i.e., the replacement of a service provider that fails to meet targets). Consequently, we were unable to test our theoretical model in its entirety. Therefore, extensions of this research should include not only changes in geography in response to PF, but also shifts of service provider in the case of outsourcing. Fourth, our research design does not allow us to distinguish firm-focused rationality (rational from the point of view of the firm's interest as a whole) from individual-manager focused rationality, or show any interplay between these two "rationalities." We implicitly assume that decision-makers are boundedly rational as they respond to performance gaps, and thereby ignore that managers' final relocation decisions can be "highly idiosyncratic, and subject to biases that they might not be aware of themselves when making those decisions" (Buckley, Devinney, & Louviere, 2007, p. 1086). Finally, we do not have data on the specific reasons why ATS projects underperformed, not micro-foundational information on the decision making process of the managers who responded to negative feedback. Qualitative research could build on our results and develop interesting extensions by exploring how managers respond to negative feedback and how these responses relate to GVC reconfiguration.

7.2 | Avenues for future research

Extensions of this research may focus on explaining the mechanisms through which MNEs measure the performance of different operations that form their GVC. For instance, researchers could explore the extent to which performance goals are influenced by decision makers' assessments of the host environment (based on wages, productivity estimations, and cultural fit) and the extent to which MNEs use estimations of their own abilities to mobilize host-country resources (Hennart, 2009). Another avenue for extending this research would be to study the link between the reasons why specific GVC activities perform differently from the aspirations of decisions makers, shedding light on the differences between reconfigurations that explicitly adjust for bounded rationality and reconfigurations whose aim is to adjust to changing circumstances in host markets or in the industry. It would also be interesting to collect more evidence on the micro-foundational dimensions of GVC reconfiguration, for example, studying the extent to which gender, educational background, and other features of the decision makers shape their response to PF.

In conclusion, we encourage more studies that analyze how MNEs reconfigure their GVC, and the causes and effects of such reconfigurations.

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ENDNOTES

[1] The exception to this would be the situation where the human resource capacity in a small host country, such as Belize or Estonia, is completely exhausted.

[2] Two of the authors of this study have had the opportunity to follow the geographic reconfiguration of ATS activities in the banking and fast-moving goods industries closely and observed a process-like nature of relocating activities. Underperforming projects provided managerial skills and information to projects established in other countries and continued to do so while the new projects ramped up. Shutting off an underperforming location before having scaled up a new location would entail a high level of risk because any glitches or delays would reduce the overall capacity of the GVC. It therefore makes sense to phase out an underperforming ATS function in a country while the corporation simultaneously ramp up similar activities in another country. In a manufacturing context, such a processual pattern was observed in the maquiladora textile industry, which through the 1990s and 2000s very gradually moved from Mexico and Costa Rica to more cost efficient locations in El Salvador and Honduras. The move did not imply an immediate closure of the underperforming factories, but a gradual phasing out as the new factories built up capacity.

[3] We acknowledge that the immediate response to negative performance feedback is not necessarily resource reconfiguration. Prior to resource reconfiguration, the firm may initiate various learning processes, including problemistic search (Cyert & March, 1963; Simon, 1955), in order to identify the causes and the actions that should be taken to address the issue. For an overview of this stream of literature, see Greve (2003a) and Dothan and Lavie (2016).

[4] We acknowledge that negative performance can occur for a variety of reasons. We do not have the necessary data to examine the exact reasons why each ATS operation produced negative performance, but that is outside of the scope of our research. Whichever the reason for negative feedback, the firm should engage in a search for solutions. We argue that such search leads to the reconfigurations of the GVC—a phenomenon that has thus far been understudied in the literature (e.g., Benito et al., 2019; Pananond et al., 2020).

[5] This seems a robust assumption, also if one takes into account learning effects. Over time, MNEs operating in-house ATS projects in foreign countries are likely to get more knowledgeable about outsourcing opportunities. The cost differential between a shift of governance mode and a shift of local service provider may therefore shrink. However, for several reasons a complete elimination of the cost differential would most likely be an exception. First, although MNEs over time spot suitable local service providers to which their ATS project can be outsourced, they still have to incur the cost of learning how to write and enforce an outsourcing contract. This cost is already incurred and absorbed by MNEs operating outsourced ATS projects. Second, MNEs will have difficulties of learning, just by their presence in the foreign country, how to mitigate risks, which specifically are attached to outsourcing, such as IPR theft, shirking, and hold-up. Third, outsourcing to local service providers may not be an option simply because the execution of a specific ATS project requires idiosyncratic competences that only the MNE itself possesses and a hand-over to a local service provider would imply excessively high knowledge transfer costs.

[6] The ORN uses three categories of ATS projects. Information technology offshoring (ITO) includes activities related to the management of information technology. IT infrastructure and software development activities are included in this category. Business process offshoring (BPO) incorporates activities related to the support of standard business functions. It includes human resource management, finance and accounting, supply chain logistics, and customer service management. Knowledge process offshoring (KPO) refers to the

geographical relocation of high-value functions. It includes data analysis, engineering and legal services, product design and research, and development activities.

[7] In addition to the use of distinct data sources, we ran the Harman single factor test as a post-statistical control for common method bias (Podsakoff & Organ, 1986). It showed four eigenvalues greater than 1, with the largest explaining 19% of the total variance.

[8] Henceforward, we use the terms ATS projects, functions, activities, and operations interchangeably.

[9] Our analysis only includes implementations effectively developed by the firm and does not include those in pipeline or planned. Hence, we are not including implementations back to the home country since the ORN data does not include these as "offshoring" implementations. Movement back to the home country is only presented in the "plans" of the survey but have not been included in the actual project section.

[10] A dyad of transactions in the same business area may include minor differences between the activities. For example, one BPO transaction may involve accounts payable processing, while a second transaction may involve the elaboration of the general ledger. Although both transactions may involve slightly different activities, the resources and knowledge developed in the execution of the first transaction are likely to have a significant impact on the execution of the second transaction.

[11] The use of activities within similar business areas suggests that there are enough parallels in the task content or processes to provide a useful context for subsequent activity. Greater distances between functions are not included in the analysis, as the FSA-host country combinations are considered a resource with less value (Levinthal & Wu, 2010). Alternative activity aggregations using narrower and broader measurements are included in the robustness checks.

[12] Larsen et al. (2013) published the first study based on ORN data using differences between actual and expected savings. They called these differences "cost estimation errors." Their argument was that complexity, experience, and organizational design orientation affect the firm's cost estimation ability. Larsen et al.'s (2013) argument implicitly assumed that no errors should be made in their dependent variable under ideal conditions. We adopt an alternative argument and use the variable in a different manner (explanatory rather than dependent variable). The reason for this application of the variable is rooted in the PF theory perspective adopted in this paper. PF theory describes differences between the expected and achieved costs not as cognitive errors resulting from complexity but as opportunities to reassess knowledge (Levitt & March, 1988; Petersen et al., 2008) that motivate a firm's actions.

[13] Seventy-eight percent of the projects in the dataset report cost efficiency as an important driver (31%) or highly important driver (47%) of the country selection.

[14] As an indication of its dominance, 56% of the projects in the sample were located in India or China.

[15] Seventeen firms in the dataset (8% of the total) reported that they initiated their ATS offshoring in more than one country in the same inception year. From these, fourteen firms developed projects in two different countries, two firms developed projects in three countries and one firm developed projects in four countries in the same year.

[16] Using a Likert type scale (1–5), the ORN survey inquired the importance of labor costs as a motivating factor behind the decision to locate an offshoring project in a particular country. This measures managers' perceptions about costs. In our analysis we preferred to use ILO's labor cost information as it facilitates the establishment of a common ground to compare wage differences across host and home countries in the different years of operation included in the dataset.

[17] We used the STATA command ETREGRESS to conduct the simultaneous estimation of the select and outcome models.

[18] We thank one of our reviewers for suggesting us to explore this possibility. Results of these estimations are available from the authors upon request.

[19] The lack of specific project implementation data and the failure to confirm if the planned project was executed or not imposes comparability limitations with our main regression analyses. Even under those limitations, we discuss these results with the intention of providing additional information for readers interested in reshoring phenomena and its relation to performance feedback.

[20] The average time between savings expected and savings achieved in the dataset is 3.2 years (the *SD* is 2.4 years).

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APPENDIX

The purpose of this appendix is twofold. Its first goal is to present how the ORN data is used in this longitudinal analysis of offshoring projects and their country locations. Its second goal is to present descriptive information on how negative performance gaps are distributed in terms of project characteristics (i.e., potential sources of variation leading to the emergence of negative performance gaps) such as home or host country, business function, firm size, or year of project development.

We build on the historical information included in the ORN database to compare the percentage of savings expected before executing the project and the savings achieved (measured as percentage of cost improvement the fiscal year previous to filling out the survey) for each

project. This makes up our main independent variable.[20] To test our hypotheses about search patterns in global operations we combined these data with information about "large" host countries (India or China), firms' existing GVC structure (single- or multi-country), and firms' choice of governance mode (captive or outsourced). The longitudinal features of the ORN data with rich details at the firm and project level enable an analysis of firms' international expansion in a behavioral perspective. To provide the reader with an insight into the ORN dataset as used in our study, this appendix includes: (i) a description of the clusters of data used in this study; (ii) a general description of the firms included in the study; and (iii) summary information as to the characteristics of the projects under analysis.

i. Description of the clusters of data used in this study

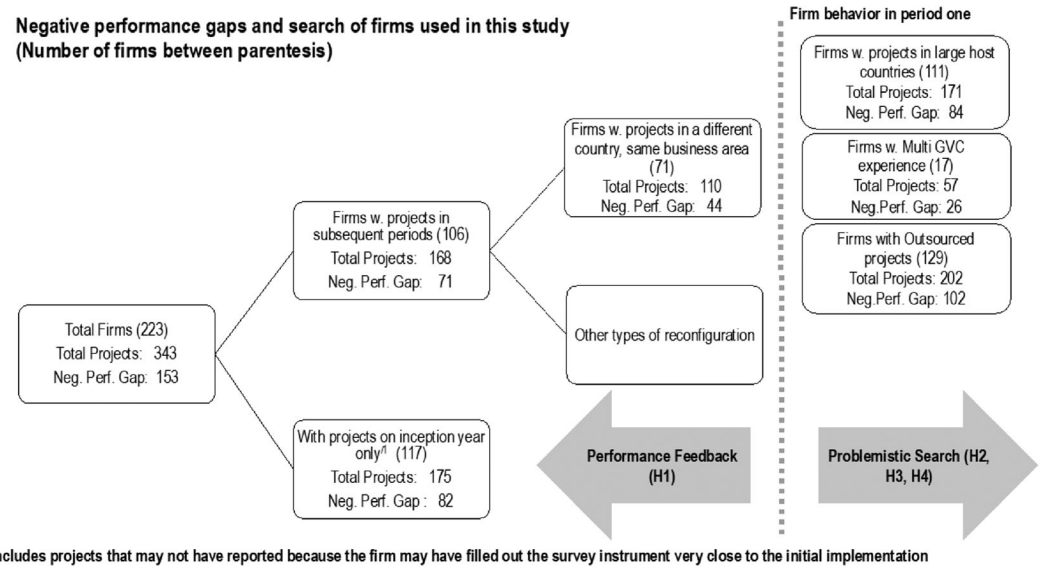

FIGURE A1 Organization of the Offshoring Research Network (ORN) data for this study (with indication of hypotheses)

ii. General description of the firms included in the study

TABLE A1 Firm distribution by headquarters location (home country)

Headquarters location	Number of firms	Firms with projects with neg. perf. gap by HQ location	% of projects with neg. perf. gap by HQ location
United States	136	67	49%
Western Europe	81	30	37%
Australia	3	3	100%
India	2	2	100%
Asia	1	1	100%
Total	223	103	46%

TABLE A2 Firm distribution by size (number of employees)

Firm's size (number of employees)	Number of firms	Firms with projects with neg. perf. gap by size	% of projects with neg. perf. gap by firm size
Large (>20,000)	73	31	42%
Midsize (500–20,000)	72	33	46%
Small (<500 empl.)	78	39	50%
Total	223	103	46%

TABLE A3 Firm distribution by industry sector

Industry sectors	Number of firms	Firms with projects with neg. perf. gap	% of projects with neg. perf. gap by industry sector
Aerospace/Defense/Telecom/ Govt.	20	8	40%
Arts/Media/Consumer Goods/Retail	12	5	42%
Automotive/Construction/ Logistics	44	20	45%%
Banking/Finance/Insurance	36	16	44%
Biotech/Pharma/Healthcare/ Agriculture/Chemical	10	7	70%
Services	63	26	41%
High Tech/Software	38	21	55%
Total firms	223	103	46%

iii. Summary information about the characteristics of the projects under analysis

TABLE A4 Project distribution by business function

Business functions	Number of projects	Projects with neg. perf. gap by function	% of projects with neg. perf. gap by function
BPO:	124	53	43%
Call Centers	41	18	44%
Finance and Accounting	36	17	47%
Human Resources	10	3	30%
Marketing and Sales	16	3	19%
Procurement	21	12	57%
ITO:	147	73	50%
IT Infrastructure	93	48	52%
Software Development	54	25	46%

TABLE A4 (Continued)

Business functions	Number of projects	Projects with neg. perf. gap by function	% of projects with neg. perf. gap by function
KPO:	72	27	38%
Analytical Services	5	2	40%
Engineering Services	28	13	46%
Legal Services	3	1	33%
Product Design	12	2	17%
R&D	24	9	38%
Total	343	153	45%

TABLE A5 Project distribution by country/region

Locations	Number of projects	Projects with neg. perf. gap by location	% of projects with neg. perf. gap by location
India	171	84	49%
Latin America	41	21	51%
Eastern Europe	36	14	39%
Rest of Asia	28	10	36%
Western Europe	28	8	29%
China	22	11	50%
USA	9	3	33%
Australia	4	1	25%
Africa	2	1	50%
Middle East	2		0%
Total	343	153	45%

TABLE A6 Information about the main independent variable

Information	Source/calculation	Count	Mean	*SD*	Min	Max
(1) Expected savings	ORN data	343	38.2	19.7	0	90
(2) Achieved savings[a]	ORN data	343	32.2	22.9	−40	100
(3) Aspiration gap negative performance	=(2) − (1) 0 if asp gap≥0 or	343	−6.0	17.7	−100	65
(4) Gap	|asp gap|<0	343	8.6	14.5	0	100

[a]From the 343 projects in the database, only three attained negative achieved savings. Two were equal to minus 40% and the third one minus 25%.

TABLE A7 ATS projects developed by year and by governance mod (indicates the year where the focal project (not the follow up implementation) has been developed)

Year	Total inception projects in focal year	% of inception projects attaining neg. perf. gaps	Inception projects developed in-house	% of inception in-house projects attaining neg. perf. gaps	Inception projects developed by a third party	% of inception outsourced projects attaining neg. perf. gaps
1995	17	24%	9	44%	8	0%
1996	9	11%	6	0%	3	33%
1997	2	0%	1	0%	1	0%
1998	3	67%	2	100%	1	0%
1999	21	43%	7	14%	14	57%
2000	25	44%	14	43%	11	45%
2001	10	80%	1	0%	9	89%
2002	35	54%	16	50%	19	58%
2003	32	28%	14	43%	18	17%
2004	47	60%	19	68%	28	54%
2005	54	41%	21	14%	33	58%
2006	43	49%	18	28%	25	64%
2007	39	38%	13	23%	26	46%
2008	6	67%	0	0%	6	67%
Total	343		141		202	