

A decisional framework for manufacturing relocation: Consolidating and expanding the reshoring debate

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Abstract

With respect to the increasing trend of companies reversing or modifying previous offshoring decisions, research on manufacturing relocation has gained momentum over the past decade. However, despite increasing efforts in this field, the general understanding of relocation still lacks maturity, with numerous conflicting results and arguments from a variety of industrial and regional contexts that are yet to be consolidated. This study uses a systematic literature review method to address this lack of consolidation, contributing to academia in three ways. First, this paper presents a novel decisional framework that involves all of the relevant aspects of a relocation decision based on 158 reviewed papers, laying a solid foundation for theoretical, conceptual and empirical development. Second, it consolidates and disambiguates all of the relevant terminologies used in relocation debates, providing proper logical clarification. Third, we identify 25 gaps in the research across all decisional aspects and propose three integrated research avenues that are critical to the accumulation of knowledge.

INTRODUCTION

In the wake of long-standing offshoring practices, the discourse surrounding globalisation and the future trajectory of global value chains (GVCs) has begun to evolve (UNCTAD, 2020). A rising trend has seen Western firms, especially those with operations in Asia, either revert to in-house production or opt for local subcontracting—a process commonly termed as ‘reshoring’ (Fratocchi et al., 2014; Tate et al., 2014). Exacerbated by the pandemic and emerging geopolitical tensions, businesses now face multifaceted pressures—financial, operational, political, and strategic—prompting them to enhance resilience or diversify their operations.

In recent years, reshoring has garnered significant academic attention. Relocation decisions are widely understood to be process-driven, influenced by numerous intri-

cate factors that shape the ultimate choice (Baraldi et al., 2018; Benstead et al., 2017). Yet, the diverse disciplines exploring this topic, combined with the specific objectives and scopes of individual studies, have led to a fragmented body of literature. While various studies have delved into specific connections, such as how certain challenges might instigate changes in location or ownership (Huq et al., 2016; Moretto et al., 2020), gaps remain in understanding the broader implications. For instance, the influence of factors like industrial norms or political views on managers’ perceptions of these challenges is unclear. Such influences not only affect the initial decision-making but also the firm’s subsequent evaluation of the decision’s success and the ramifications of such evaluations on future decisions.

Ideally, literature reviews bridge such gaps by synthesizing diverse perspectives. However, upon analysis of several such reviews on relocation, it becomes apparent that there

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are certain constraints in their comprehensiveness. Some esteemed literature reviews, for instance, have based their findings on a relatively limited selection of papers (≤ 20), potentially side-lining a broader range of viewpoints (e.g. Boffelli & Johansson, 2020; Fratocchi & Di Stefano, 2019a; Stentoft et al., 2016). Other commendable studies have centred their focus primarily on specific facets of relocation such as motivations (e.g. Wiesmann et al., 2017), sustainability (e.g. Cosimato & Vona, 2021; Sirilertsuwan et al., 2018), or particular industries (e.g. Fratocchi & Di Stefano, 2019b). The literature thus beckons for a review offering a comprehensive journey, from the germination of relocation thoughts to decision-making and final evaluation. This gap underscores the intricate task of weaving together the diverse threads of decision-making and calls for a unified research direction distinguishing 'reshoring' from its predecessor, 'offshoring'.

Furthermore, a few theories predominantly shape the discourse on this subject within the literature, namely transactional cost economics (TCE; Williamson, 1975, 1985), resource-based view (RBV) of the firm (Barney, 1991; Peteraf, 1993), and the eclectic theory (Dunning, 1980, 1988). While these theories offer insights into firms' regional preferences and production strategies, they are not without critique. Academics have expressed concerns that both TCE and RBV may be painting with broad strokes, while the eclectic theory might be overly inclusive in its approach (Barbieri et al., 2018; Fratocchi et al., 2016). Specifically, TCE seems to overlook qualitative aspects such as supply chain resilience and the nuances of political pressure. Similarly, RBV tends to bypass the fluctuating dynamics of external environments, including geopolitical shifts or global crises. On the other hand, the eclectic theory, while comprehensive, often falls short in pinning down specific drivers of relocation decisions, such as emerging nationalism or government incentives favouring domestic production. Such concerns become evident when observing firm strategies that diverge from these established theories as well as when comparable firms act differently, suggesting these theories might not fully capture the complexities of current business practices. The literature's over-reliance on these theories has inadvertently limited its depth, creating a discernible theoretical gap. In this review, we propose enriching the discourse by integrating theories like the institutional logics perspective (Thornton et al., 2012) and managerial cognition (Stubbart, 1989), especially focusing on the behavioural and cognitive dimensions of decision-making.

Acknowledging the abovementioned gaps, we see a pressing need for a comprehensive review that seamlessly integrates the myriad facets of relocation decision-making. This review should cohesively bring together the various elements of relocation decision-making, tracing the

evolution from initial relocation considerations to final evaluation, all the while ensuring the study's replicability in future research. Our approach distinguishes itself in multiple ways: we draw from an expansive set of 158 papers from 2009 to 2022, encapsulating discussions on the pandemic, geopolitical shifts, and evolving globalisation trends. Instead of solely focusing on firms returning to their home countries, we have broadened the traditional perspective on 'reshoring' perspective to cover all secondary production movements. Due to the evolving nature of this research area, our paper includes studies from all peer-reviewed journals, moving beyond the typical preference for only high-impact publications. We aim for a holistic understanding by embracing the entire relocation continuum rather than isolated decision aspects. This broad and inclusive strategy ensures our review offers a depth and breadth surpassing that of more specialised studies.

This study's contribution to the manufacturing relocation literature is threefold. First and foremost, we build upon the 'offshoring' research by Mihalache and Mihalache (2016) adopting a similar inductive approach to craft a 'relocation' decision-making framework. This framework outlines a three-stage relocation journey, encompassing the phases of *consideration*, *decision*, and *evaluation*, complemented by seven specific decisional elements. Such coverage paves the way for the creation of more encompassing theories. It is crucial to underscore that decisional elements and their surrounding environments can evolve. Hence, ensuring the adaptability and replicability of our review becomes paramount.

Second, our paper addresses the longstanding issue of inconsistent terminologies in the realm of manufacturing relocation by presenting clear and logical definitions. Current literature has myriad terms like 'reshoring' and 'backshoring', and their varied usage, as noted by Wiesmann et al. (2017), leads to confusion and hinders meaningful cross-study comparisons. This disparity often arises because researchers lean towards definitions prevalent in their reference literature or, at times, those that best support their arguments. By offering consolidated and clarified terminology, we aim to foster uniformity and alignment in future studies. Through this, we aspire to usher in a greater consensus within the academic domain.

Third, our paper illuminates potential avenues for future theoretical and methodological research, anchored by our framework. Through our comprehensive review, we spotlight areas like driver relevance and outcome evaluation that warrant further investigation. Our findings reveal knowledge gaps spanning the seven decisional aspects of the relocation journey, presenting researchers with clear avenues for exploration. To deepen understanding, we advocate for three primary research avenues: emphasising

the cyclical nature of relocation decisions, congregating multi-disciplinary theories to address the recent evolution of GVCs, and combining decisional aspects for wider policy debates.

The remainder of this paper is as follows. Sections 2 illustrates the systematic methodology used in our review process. Section 3 summarizes the manufacturing relocation repertoire and clarifies the usage of various terminologies. Section 4 synthesizes the literature body and presents a novel C-D-E decisional framework based on various units of analysis. Section 5 summarizes the research gaps and proposes suggestions for future research. Finally, Section 6 draws on the main conclusions and limitations of the literature review.

METHODOLOGY

This study utilized the systematic review methodology, which is a well-established literature review method with rigorous protocols and explicit documentation of reviewing steps (Tranfield et al., 2003). The aim of this review is to provide a comprehensive framework of the relocation landscape to date, and we encourage future researchers to periodically carry out similar reviews to build on our framework. Therefore, we chose the systematic reviewing methodology, since it ensures transparency during the process, allows replicability for future researchers, and counteracts selection bias by explicitly stating various assumptions. This study follows Tranfield *et al.*'s (2003) three-step approach of *planning*, *conducting* and *reporting* the review (see Figure 1).

Planning the review

Problem formulation. The aim of this paper is to formulate a decisional framework to determine and evaluate manufacturing relocation decisions. A preliminary scoping study was conducted to evaluate the relevance and size of the relocation literature, as suggested by Tranfield et al. (2003). During the study, we reviewed the most-cited relocation articles and research notes, mapped frequently used theories and concepts, and contextualised the current academic landscape to formulate a research protocol.

Protocol development. As a result of the emerging nature of the relocation subject (unlike offshoring, where abundant studies were conducted), we made the decision to perform an exhaustive review, instead of restricting our study to high-impact journals, to involve as much evidence and academic effort as possible in this novel area. However, such a wide scope would have yielded a large number of articles with mixed quality and reliability, which led to the

further decision to include only peer-reviewed studies in this paper to ensure a maintainable standard of quality.

A combination of keywords and subject areas yielding a manageable number of results was finalized after iterative discussions and refinements between the two researchers. The aim of the refinements is to ensure that the search covers as much ground as possible without capturing too many irrelevant studies. The following keywords were used for our final search: *re*shor**, *back*shoring*, *home*shoring*, *near*shoring*, *on*shoring*.¹ Papers were limited to subject areas including business management, operations management, engineering, economics, finance, engineering, social sciences and decision sciences. All articles written in languages other than English were excluded. Furthermore, this paper focuses on the relocation of 'manufacturing' activities, so all 'service' relocation studies will be removed at a later stage, as it is impractical to eliminate these studies effectively at this point.

Comprehensive search. We based our search on two of the most widely used academic databases with selective journal-based inclusion policies, namely, Scopus and Web of Science (WoS), to avoid omitting any high-impact articles in the literature body (Martín-Martín et al., 2018). Identical strings of keywords were used on both databases, and limitations on subject areas were set according to the review protocol.²

Conducting the review

Title and abstract screening. We skimmed through the title, abstract and keywords of 518 papers³ and determined their relevance to post-offshoring relocation of manufacturing. Two reviewers conducted independent and parallel assessments of these papers. All of the disagreements between the two reviewers were discussed and resolved,

¹ A similar set of keywords was used by Wiesmann *et al.* (2017) in another reshoring systematic literature review. A Google Scholar search was performed and references were cross-checked on major papers to avoid missing any potentially important keywords. Initially, we thought of including 'relocation' in our keyword set. However, given that most papers favour specific terms such as 'reshoring' or 'backshoring' either alongside or in lieu of 'relocation', we decided against its inclusion to circumvent irrelevant papers. Furthermore, the term 'farshoring' was excluded from the keyword set as it was consistently mentioned alongside 'nearshoring' for comparative analysis and not utilized as a standalone term.

² For Scopus, the selected subject areas were 'Business, Management and Accounting', 'Economics, Econometrics and Finance', 'Engineering', 'Decision Sciences' and 'Social Sciences'. For WoS, the categories selected were 'Management', 'Business', 'Operations Research Management Science', 'Economics', 'Engineering Manufacturing', 'Engineering Industrial', 'Engineering Electrical Electronic' and 'Business Finance'.

³ The search was conducted on 30 June 2022 for both databases.

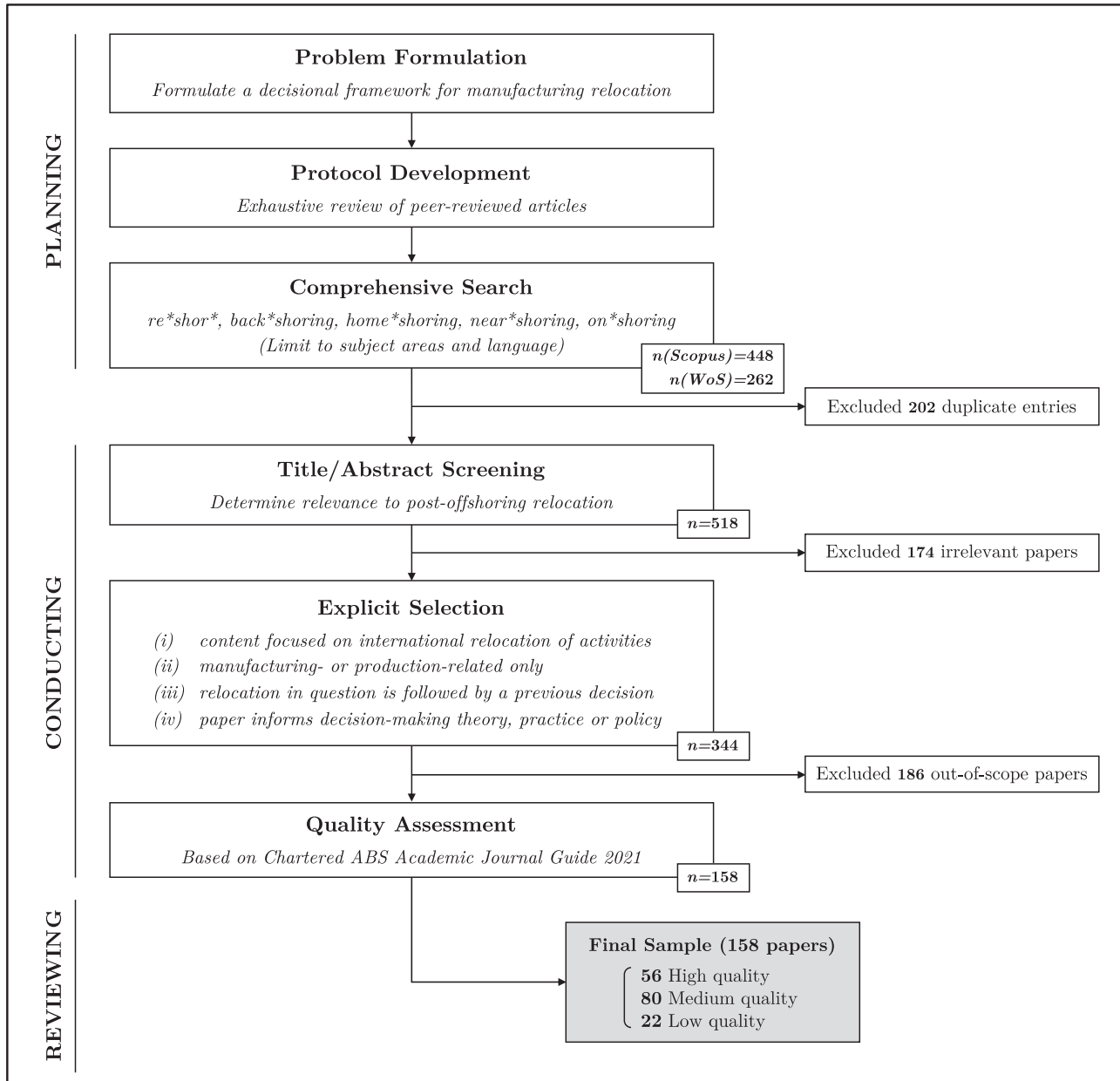


FIGURE 1 Chronological distribution of relocation research.

and 174 papers that focused on completely irrelevant topics (e.g. architecture, construction, oil production) were withdrawn from the pool.

Explicit selection. We then obtained the full text of the remaining 344 papers, wherever possible, to further evaluate the relevance of the manuscripts. Papers that were not peer-reviewed articles were excluded at this stage, including conference proceedings, working papers, books, book chapters, short surveys, news articles, magazine articles and industrial reports. Editorials and research notes from peer-reviewed journals were included, as they provide synthesised analyses or insights of relevant papers.

Content-wise, we considered an article to be relevant when it satisfied all of the following four criteria: (i) it focuses on the international relocation of activities regardless of the terminologies used; (ii) the relocating activities are manufacturing- or production-related (i.e. service reshoring studies are excluded); (iii) the relocation is followed by a previous offshoring (including nearshoring) decision (i.e. nearshoring as an *initial* offshoring practice is excluded); and (iv) it informs decision-making theory, practice or policy. The selection process was also performed by the two reviewers in parallel and independently. Any discrepancies were discussed and agreed upon, and

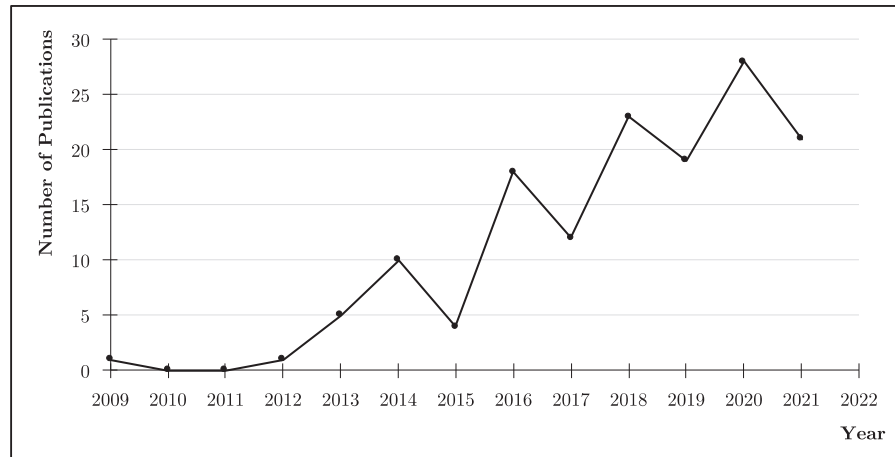


FIGURE 2 Chronological distribution of relocation research.

186 papers (including duplicate entries) were removed at this stage.

Quality assessment. We meticulously evaluated the remaining 158 papers, predominantly using the Chartered ABS Academic Journal Guide 2021 as our reference. Journals rated 3, 4, or 4* were recognized as top-tier; those rated 2 were categorized as intermediate-tier, while the others were identified as being more practitioner-oriented or not traditionally contributing to theoretical advancements. Journals not found in the guide underwent an independent assessment by the two researchers, with all findings subsequently discussed and harmonized.

This process led to the identification of 56 top-tier, 80 intermediate-tier, and 22 practitioner-oriented papers. In line with the recommendations of Xiao and Watson (2019), this study will predominantly draw from the top-tier papers, followed by insights from the intermediate-tier ones. The practitioner-oriented studies will serve as supplementary references, rather than central literature.

Reporting the review

Data extraction and synthesis. From the 158 papers that reached this stage, we sought insights into the reshoring decision-making process, specifically examining the reasons behind these decisions, the individuals involved in the decision-making, the subjects of these decisions, and the subsequent implications. We adopted an inductive coding approach, aiming to uncover previously unhighlighted or unconnected facets, and allowing our framework to evolve from this sizable sample. From our analysis, seven distinct themes surfaced from the codes. We then organized these themes in alignment with Lyles' (1981) model of strategic problem formulation, which we detail in the subsequent sections. All data extraction and codifica-

tion were performed using NVivo 12 software. The two researchers independently extracted information from a few papers and reached an agreement on the targets for extraction. The remaining papers were split between the two researchers and discussed afterwards, with frequent communication throughout the process. The results were discussed afterwards, followed by a jointly performed synthesis and reporting process. The details of the papers analysed are presented in the meta-table in Appendix A.

RESULTS AND FINDINGS

Descriptive analysis

The *chronological distribution* of our reviewed literature sample is presented in Figure 2, showing a clear upward trend in research interests, peaking at the end of the timeline. It also shows how much the literature base has grown since Barbieri *et al.* conducted their comprehensive review in 2018. Figure 3 further breaks down the *type of research, methodological choices* and *research strategies* used in empirical studies. The literature space contains a large number of quantitative studies employing existing datasets or archival data, while qualitative studies are largely exploratory. The quantitative studies, while providing more generalizable results, do not account for very recent events that have had a significant impact on industries, an impact that is investigated mainly by the qualitative studies. Therefore, we argue that the state-of-the-art of this research area is currently backed by exploratory qualitative studies that lack further quantitative verification. These reflect an interesting state of research, where the phenomenon investigated is relatively recent; hence, our knowledge remains nascent, but how scholars approach such knowledge (i.e. the

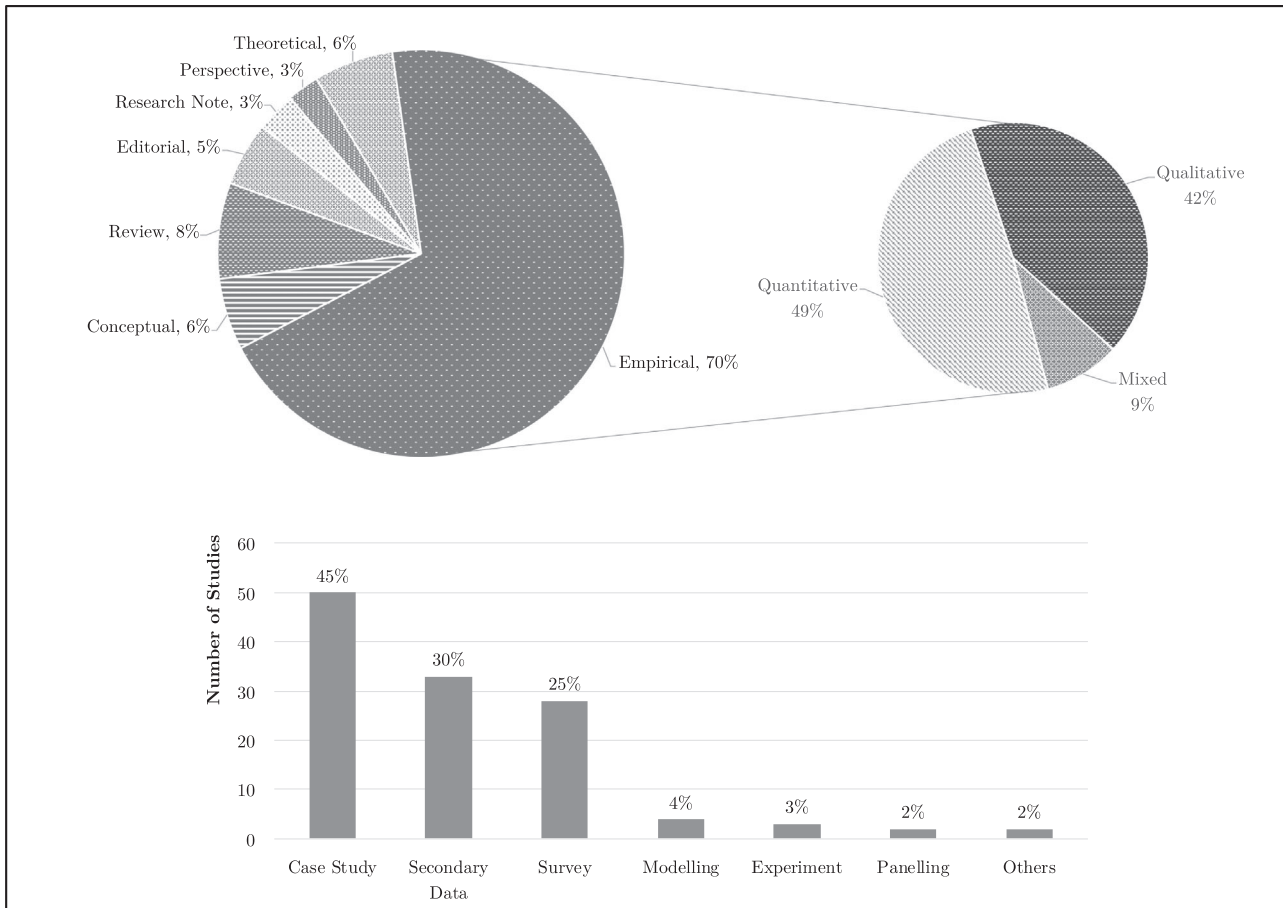


FIGURE 3 Breakdown by type of research and methodological choices⁴.

composition of methodological approaches used) is in a relatively mature state given the bodies of offshoring work that have potentially transferrable knowledge and theories to be applied.

Terminological disambiguation

Academics have expressed a variety of understandings of concepts despite using common terms such as ‘reshoring’ to describe them, adding an extra layer of complication to the subject in question (Fratocchi et al., 2014; Wiesmann et al., 2017). Scholars argue that many terms that have been used interchangeably should not be considered synonyms in the first place (Lampón & González-Benito, 2020). Such ambiguity seriously impedes the accumula-

tion of knowledge and has repeatedly been mentioned in studies over the past decade, but there are still no signs of convergence over the terminologies used in relocation studies (Wiesmann et al., 2017). Therefore, this paper disambiguates the terms by utilizing a coherent logic to select definitions used by the existing literature, meanwhile avoiding overlapping or contradicting terminologies. Hopefully, this could resolve any confusion in future research.

Although there is no ambiguity in the terms used to describe the ownership modes (namely, *insourcing* and *outsourcing*), there are various discrepancies in how researchers define the locational shifts (such as *reshoring* or *backshoring*). We start from the directional terms (i.e. terms that depict directional movements) and move on to purely geographical terms (i.e. terms that specify locational or regional characteristics). Figure 4 illustrates these terminologies from a pictorial perspective, whereas the tabulated summary is presented in Table 1.

Offshoring (directional). Decades of research effort have gone into offshoring, which typically describes locating production activities outside the company’s headquarters (Ellram et al., 2013). This includes wholly owned

⁴ The distinction between ‘conceptual’ and ‘theoretical’ papers was based on the editorial comment by Gilson and Goldberg (2015). The authors argued that the former does not necessarily propose new theories, as the latter does; rather, it aims to bridge theories and raise propositions in insightful ways, or link cross-disciplinary work to provide interesting insights.

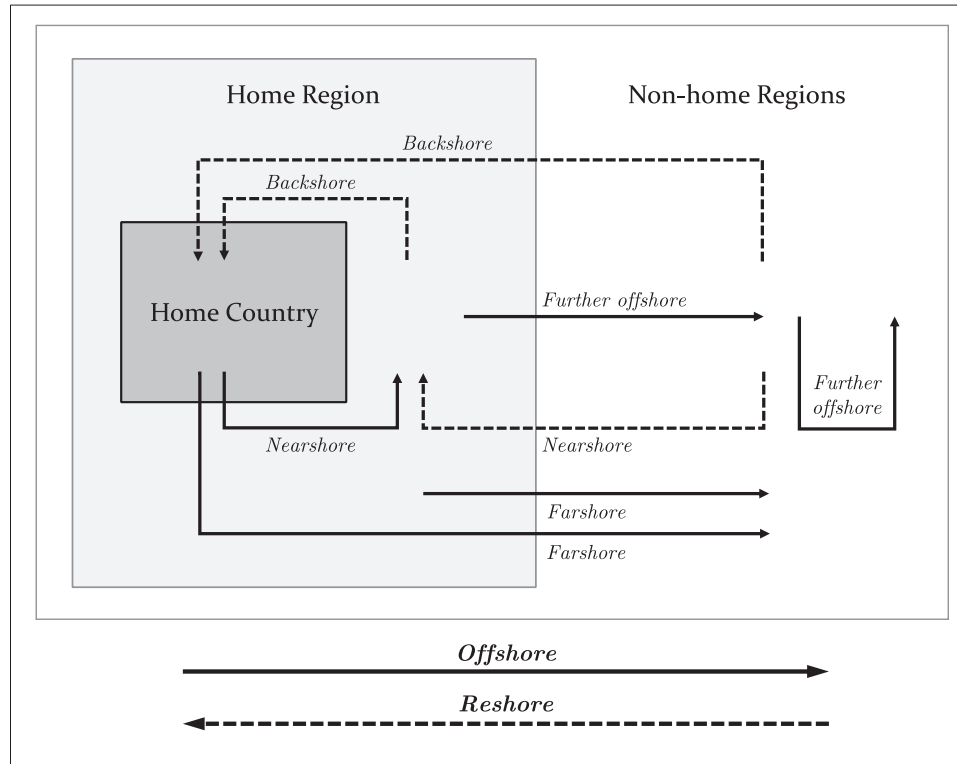


FIGURE 4 Illustrative perspective of relocation terminologies.

TABLE 1 Summary of terminological definitions.

Type	Terminology	Definition	Usage example
Directional	Offshoring	General movements <i>away from</i> the home country, regardless of ownership modes	Ellram et al. (2013)
	Further offshoring	Secondary movements <i>within or beyond</i> the previous offshored region, regardless of ownership modes	Fratocchi and Di Stefano (2019a)
	Reshoring	Secondary movements <i>towards</i> the home country, including to nearby countries, regardless of ownership mode	Ancarani et al. (2019)
Geographical	Backshoring	Partial or total relocation of foreign production back to the home <i>country</i> , regardless of the ownership mode	Kinkel and Maloca (2009)
	Nearshoring	Partial or total relocation of domestic or foreign production towards the home <i>region</i> , but excluding the home country	Ellram et al. (2013)
	Farshoring	Partial or total relocation of domestic or foreign production towards regions that are not in close proximity to the home country	Gadde and Jonsson (2019)

foreign entities, as well as outsourced or hybrid modes (Di Mauro et al., 2018). The term is mostly used as a general portrayal of the primary (initial) relocation decision. In this regard, *'further (or extended) offshoring'* denotes the secondary relocation decision when firms further move production to other offshore locations (Fratocchi & Di Stefano, 2019a), often aiming to capitalize on even lower costs or averting various risks. A typical example of further off-

shoring is when a firm moves production from China to Bangladesh or India, given the rising costs and risks of Chinese production.

However, some scholars (e.g. Gray et al., 2013) argue that the definition of 'offshoring' itself is imprecise, as it is unclear whether a relocation between high-cost countries (e.g. from the US to the UK) should be considered offshoring. More often than not, the conceptual focus of

offshoring studies is limited to relocations from high- to low-cost regions (Johansson & Olhager, 2018b). Therefore, we argue that *offshoring* should logically be viewed as a directional term that denotes general movements ‘away from’ the home country, and that *further (extended) offshoring* particularly describes the secondary movements⁵ within or beyond the previous offshored region. These movements are not necessarily relocations towards lower-cost countries, despite this often being the case.

Reshoring (directional). ‘Reshoring’ is the term that is used in the literature with the most ambiguity. Some studies define reshoring as a ‘revised’ shoring decision that includes all generic changes in location after the initial offshoring decision (e.g. Fratocchi et al., 2014; Tate et al., 2014). Some describe reshoring as ‘reversed’ in direction back to the home region, which includes both the home country and nearby countries (e.g. Ancarani et al., 2019). Others describe reshoring as a ‘reverted’ decision that delimits the destination to the home country (e.g. Ellram et al., 2013; Gray et al., 2013; Gylling et al., 2015; Martínez-Mora & Merino, 2014). Common to the above-mentioned definitions is that *reshoring* denotes the relocation of previously offshored activities (Wiesmann et al., 2017), indicating that an offshoring decision is a premise of any reshoring consideration (Gray et al., 2013). Since there are more specific concepts used in the literature that offer narrower definitions (namely, ‘backshoring’, ‘nearshoring’ and ‘further offshoring’, which we will discuss later), we propose that *reshoring* should be considered a collective umbrella term that comprises all directional movements ‘towards’ the home country, including nearby countries within the home region. To reiterate, reshoring is a purely location-based decision, which by definition ignores the ownership mode (i.e. outsourced or insourced) of the production activities.

Backshoring (geographical). Scholars generally have consistent views on the definition of the term ‘backshoring’, which denotes the partial or total relocation of foreign production back to the home country, regardless of the ownership mode (Di Mauro et al., 2018; Fratocchi et al., 2014; Kinkel & Maloca, 2009; Martínez-Mora & Merino, 2014). Since the majority of the relocation literature is based on the developed nations’ perspective, backshoring usually implies relocation from a low-cost to a high-cost region. As the term explicitly specifies the home country as the destination of relocation, we argue that *backshoring* should be seen as a purely geographical term despite its intrinsic directional implication. Similar terms used with identical meanings to backshoring include

‘*homeshoring*’ (Tate et al., 2014) and ‘*onshoring*’ (Kazmer, 2014), all describing the repatriation of foreign activities.

Nearshoring (geographical). Scholars have uniform illustrations for the use of the term ‘nearshoring’, which describes the relocation of manufacturing towards the same ‘region’ as, but excluding, the home country (Ellram et al., 2013; Fratocchi & Di Stefano, 2019a). Relocating to Central and Eastern European (CEE) countries is considered nearshoring for Western European firms, while relocating to Mexico or other Latin American countries is considered nearshoring for US firms (Roza et al., 2011). Nearshore countries often share similar cultural or linguistic backgrounds with the focal firms’ home countries. The problem with ‘nearshoring’ is that the term does not indicate the direction of the relocation; nor is there a consensus among scholars that use the term. Both offshoring to nearshore countries and reshoring from farshore countries could be seen as nearshoring in this regard. Thus, we argue that it is only logical to view *nearshoring* as a purely geographical term that describes relocation movements towards the home region.

Farshoring (geographical). Opposite to nearshoring, farshoring describes the relocation of manufacturing towards regions that are not within close proximity. Locations that are not considered nearshore are labelled as farshore (Gadde & Jonsson, 2019). However, no explicit lines were drawn in the literature between ‘near’ and ‘far’, so countries in close proximity, with similar cultural or linguistic backgrounds, are generally considered nearshore countries. Therefore, *farshoring* should literally be considered purely geographical, in parallel to its opposite term, *nearshoring*.

THE C-D-E DECISIONAL FRAMEWORK FOR MANUFACTURING RELOCATION

We have managed to synthesize the reviewed literature on manufacturing relocation into seven decisional aspects, which are further categorized into three groups—*consideration*, *decision* and *evaluation*—forming a C-D-E decisional framework (see Figure 5). This section goes through each aspect and discusses the current state of knowledge, as well as gaps within the literature that hinder further understanding of the subject matter.

Conceptual incubation

The entire relocation decision-making process (see Figure 5) starts with conceptual awareness, which is the stage when firms become aware of, and begin to reconsider, their previous manufacturing location decisions.

⁵ This represents all non-primary movements, including tertiary movements and beyond.

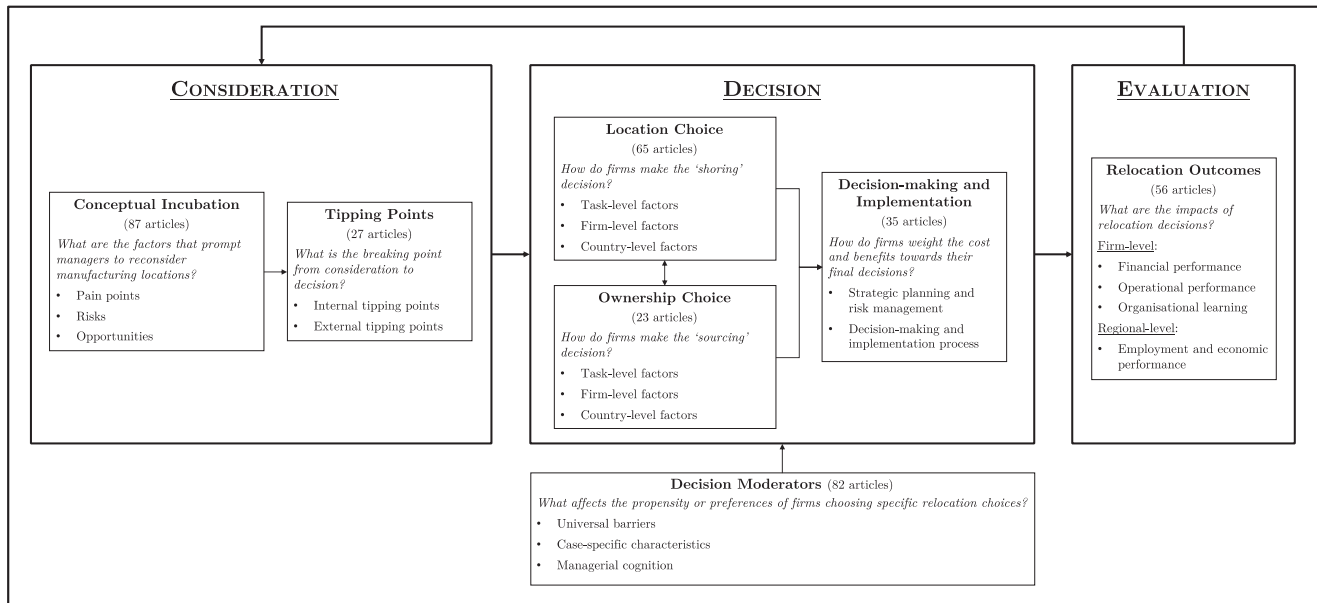


FIGURE 5 The C-D-E decisional framework for manufacturing relocation.

The reviewed literature sample contains a significant set of articles exploring the reasons why firms would consider revising or reversing their previous offshoring decisions (for lists and reviews, see Fratocchi et al., 2016; Wiesmann et al., 2017; or Barbieri et al., 2018). This section provides a brief overview of what we currently know about firms' relocating motivations and what aspects need to be addressed further.

First of all, the majority of studies have identified the numerous **pain points** that firms face during their foreign engagements, which induce them to start reconsidering their previous location decisions. These pain points are related to *cost, quality, flexibility, resources and capability*. The first, and most obvious, type of pain point stems from a wide range of *cost-related* issues, including eroding wage gaps, rising costs of sourcing, volatile energy, logistics, communication or administrative costs (Barbieri et al., 2018; Fratocchi et al., 2016). Firms also experience *quality-related* concerns, which are primarily associated with inadequate production quality as a result of suboptimal manufacturing processes or imperfect quality-control practices that lead to poor customer satisfaction and high rework rates⁶ (Bailey & De Propris, 2014; Kinkel & Maloca, 2009; Uluskan et al., 2016). Quality issues also arise from upgraded production lines that are increasingly sophisticated in nature and which therefore require additional knowledge or skills to execute (Ancarani & Di Mauro, 2018). Moreover, *flexibility-related* matters also appear to be disturbing factors that become intolerable over time,

especially given the rising trends of customisation (Ancarani & Di Mauro, 2018) and increased demand volatility (Martínez-Mora & Merino, 2014; Wu & Zhang, 2014). The lack of operational flexibility from long supply chains, in terms of both volume and variety, calls for the establishment of supply chain resilience and ultimately drives firms to relocate production (Gray et al., 2013; Kinkel & Maloca, 2009; Srai & Ané, 2016). Furthermore, *resource and capability-related* problems appear to be another significant set of pain points. Resources, such as raw materials or specialized suppliers, naturally drive firms to locate production accordingly (Ellram et al., 2013). Scholars have also pointed out that firms face losses in innovation capabilities when offshoring production as a result of the extended physical and cultural distance between R&D and manufacturing divisions (Tate et al., 2014). Moreover, in competitive environments, where the importance of production variety outweighs that of scale economies, it would be desirable for firms to recouple innovation and production capabilities (Bailey et al., 2018).

Second, there are various **risks** involved when firms manufacture internationally. *Firm-side risks* include global supply chain risks that are inherent to long supply chains (Bailey & De Propris, 2014; Huq et al., 2016), potential infringement of intellectual property rights (IPR) (Tate et al., 2014), exchange-rate fluctuations (Gylling et al., 2015; Martínez-Mora & Merino, 2014), cultural or institutional risks (Ancarani et al., 2015; Srai & Ané, 2016), ethical issues (Moore et al., 2018), and political and social uncertainties (Ellram et al., 2013; Kinkel, 2012; Martínez-Mora & Merino, 2014; Tate et al., 2014). Conversely, several *demand-side risks* can also drive relocation. Studies have shown that

⁶ Arguably, this is also a cost-related factor, but fundamentally it stems from quality-related issues.

volatile or fluctuating demand would necessitate a more responsive manufacturing strategy (Lund & Steen, 2020; Wu & Zhang, 2014). A shrinking market size might stimulate considerations towards relocation should a firm initially offshore with an emphasis on market-seeking purposes (Gray et al., 2017; Kinkel, 2012; Wu & Zhang, 2014). Moreover, increased competition for a limited pool of resources, such as labour and transportation, would induce reshoring considerations, as explained under the concept of factor market rivalry (Tate et al., 2014).

Finally, the emergence of new **opportunities** also incentivises firms to relocate. Favourable governmental policies or technological advancements alter the fundamental cost structures and thus allow previously impractical choices to be taken into consideration (Ancarani et al., 2019; Bailey et al., 2018). Additionally, shifts in corporate strategies, including global reorganization (Fratocchi et al., 2016), portfolio rationalization (Srai & Ané, 2016), business expansion (Huq et al., 2016) and an increased emphasis on environmental and social issues would naturally drive relocation considerations (Fratocchi & Di Stefano, 2019a). Many scholars have also identified the ‘made-in’ effect perceived in developed economies, under which firms expect and experience improvements in brand image and purchasing willingness when relocating production (Ancarani et al., 2015; Di Mauro et al., 2018). And, unquestionably, market growth in emerging economies serves as a motivation for firms that are considering entering them (Ellram et al., 2013; Srai & Ané, 2016).

Overall, the existing literature has been saturated with studies on drivers and motivations. However, our analysis shows that their relevance to individual decisions is under-researched, a topic that we will discuss further in the following chapter. Another critical shortcoming of the existing knowledge is how the drivers weigh on one another. For instance, it is widely recognized that political risks have become a major concern for manufacturers operating in China (Harris et al., 2020), but the cost implications that stemmed from such risks are largely unknown. We suggest that future studies place more emphasis on these aspects, as they are critical to connecting the dots between drivers and decisions. Moreover, the impact of previous location decisions and organisational learning (Levitt & March, 1998) on managers’ perceptions of relocation drivers is also a promising area of research.

Tipping points

The second part of the C-D-E decisional loop is the tipping points when *considerations* become actual *decisions*. This is the key difference between initial offshoring and

relocation decisions, as the reasons for such operational or strategic shifts differ in nature. Kim and Chung (2022) also argue that relocation decisions should be based on supply chain perspectives, in addition to the drivers. This is a less researched area, but we argue that it is critical for understanding and further evaluating relocation decisions, since the drivers reviewed in the previous section alone do not measure the actual or relative magnitude (Barbieri et al., 2018). Hence, it is difficult to establish linkage between ‘critical’ drivers, decisions and outcomes that provides insightful inferences or focused arguments. A tipping point, or ‘trigger’, could be in the form of an event, an opportunity or a problem (Boffelli et al., 2018; Hartman et al., 2017), and our review synthesises them into two groups: *internal* and *external*.

Internal tipping points. The existing literature has categorized internal tipping points as: (1) the extent to which the drawbacks of current location strategies add up (Benstead et al., 2017; Fratocchi & Di Stefano, 2019a; Hartman et al., 2017); or (2) when firms alter their business strategies. Despite the abundance of efforts made in investigating the motivations and drivers of relocation, surprisingly few studies have acknowledged the notion of tipping points. Many of the ‘drivers’ could be identified both in firms that reshored and in those that did not, suggesting that there is a gap in knowledge on the characterization of reshoring firms (Barbieri et al., 2019; Uluskan et al., 2017). As a result, we end up with lists of relocation drivers but without the proper means to further evaluate their relevance to individual cases.

Future research could compensate for this by investigating tipping points based on various situational aspects, such as how a firm’s strategy or competitive priority makes perceptual differences on the valuation of the various drivers (Foerstl et al., 2016; Fratocchi & Di Stefano, 2019b). For instance, quality defects have major cost implications for the pharmaceutical industry and therefore should be of higher importance than other drivers (Huq et al., 2016). In addition, Bailey and De Propris (2014) suggest that the insufficient wage cost differential (between Europe and China) is a reason why there is less reshoring action in the UK and Europe than the US, indicating that the extent, or relevance, of eroding wage gaps is different between European and American firms.

Additionally, the ‘time’ aspect should also be given consideration when researching relocation decisions. Why did a firm relocate at a certain point of time instead of (say) 2 years before? Theoretical lenses such as the critical incident technique (Flanagan, 1954) could potentially be applied on such analyses (Bals et al., 2016). Comparisons between relocated and non-relocated firms would also yield insightful results on the relevance of drivers (Barbieri et al., 2018; Fratocchi et al., 2016).

External tipping points. External tipping points are exogenous events or forces that cause severe disruptions or drastically alter the business or economic landscape, which includes: (1) unexpected cost rises, network shocks or relationship terminations (Baraldi et al., 2018; Fratocchi et al., 2016); (2) regional or global events such as natural disasters, financial crises or geopolitical tensions; or (3) when significant opportunities emerge (Hartman et al., 2017). Three of the most discussed external tipping points in the existing literature are the 2008 financial crisis, COVID-19 and geopolitical events.

The 2008 global financial crisis was the first external event to cause major disruption since the reshoring trend became an academic field of interest. Kinkel (2012) conducted an extensive study comparing offshoring and backshoring determinants before and after the crisis. The results from the study indicate that companies have become more reluctant to invest in resources on quality management practices, and they suggest that the difficulty of transferring such practices to foreign settings further worsened quality issues and ultimately prompted reshoring. Moreover, labour-related issues, from the (often unexpected) rise in labour costs, to the fluctuation of skilled personnel, have grown in relevance post-crisis as a result of increased search and coordination costs. However, despite being highly ranked motives, flexibility- and delivery-related issues have significantly lost their criticalities since fulfilment has become easier as global sales have decreased during and after the crisis.

In the case of COVID-19, supply and demand shocks, coupled with swift economic rebound, jointly created the perfect storm of supply chain disruption (Panwar et al., 2022). While there is a general consensus that additional self-reliance is required (Barbieri et al., 2020), studies generally argue against reshoring as an appropriate response to the pandemic, for three reasons. First, empirical evidence has shown that shorter supply chains do not necessarily create robustness (Harris et al., 2020). Second, the fundamental source of resilience is, in fact, increased *diversification* and *externalization*, as they decrease the risk of failure compared to *centralization* (Kang et al., 2020; Strange, 2020). Third, reshoring implies a radical overhaul of the global economic system, which is impractical to achieve, and such an overhaul would cause immense economic and social hardship for many parts of the world (Kang et al., 2020; Panwar et al., 2022). Researchers generally believe that reshoring might not be the optimal solution for dealing with global supply chain disruptions such as pandemics; however, the disruptions might have driven executives and policy-makers to seriously consider developing local supply networks and to build up industrial resilience for national security purposes (Li, 2020). The case study by Ryan et al. (2022) demonstrated how

MNEs could leverage the hierarchical mode of GVC governance to simultaneously reach ample efficiency and resilience. Future research could conduct in-depth comparisons between the 2008 financial crisis and COVID-19 regarding the characteristics of these crises and the disruptions they have caused in global supply chains. Analyses on how such characteristics impact international manufacturing differently may provide significant contributions to both international business and GVC studies. Additionally, we recommend that future studies adopt a similar approach to Kinkel (2012) on COVID-19 and analyse how the criticalities of various drivers shift over time.

Finally, geopolitical disruptions and rising protectionist sentiments are also identified as critical tipping points for relocation decisions. Moradlou et al. (2021) proposed that location-related drivers have outweighed others during the Brexit transition period. Differences in pandemic handling or even political ideologies have led to intensified rivalries between major economies and subsequent international decoupling, although some industries might be impacted more heavily than others in terms of desirability and feasibility (Harris et al., 2020). Additionally, Kurata et al. (2020) argued that the rise of protectionism, in the form of trade barriers, can jeopardize the eventual welfare gains for the backshoring (i.e. home) country. As these are relatively recent (and ongoing) events, studies on these topics remain scarce. Further investigations on the calculations and decision-making behind firms' responses to geopolitical issues would be immensely valuable, especially when governmental policy incentives or coercion come into play.

Arguably, many of the abovementioned drivers or events are interconnected in the sense that one reinforces the others. For instance, COVID-19 highlighted the ideological differences between nations and therefore heightened geopolitical tensions. On the plus side, the pandemic offered firms and governments a unique opportunity to review their strategies and reposition themselves for the future (Pla-Barber et al., 2021), offering scholars a great opportunity to explore rich empirical evidence to expand existing theories. Moreover, we believe that the tipping point is the critical angle that the existing literature has so far overlooked.

Location choice

A firm would face two main decisions should it decide to relocate production, either partially or entirely, the first being the choice of location. This is arguably more complex than an offshoring location choice, as companies move beyond purely cost savings and start considering a multitude of value-creation factors when determining

optimal regions for their manufacturing activities (Ellram et al., 2013; Johansson & Olhager, 2018a). The choice of location essentially comes down to three options: *further offshore*, *nearshore* or *backshore*. And, of course, there are always options to not relocate and engage in local supplier development (Uluskan et al., 2016) or even to terminate operations; however, these are out of the scope of this study. Regarding the decision between the three options, the existing literature has explored factors that span three levels of analysis: *task-level*, *firm-level* and *country-level*.

Task-level factors. One stream of studies focused on task-level factors, such as labour or technology intensity, forming the fundamental rationale for location choices. Transactional cost economics (TCE; Williamson, 1975, 1985) and the eclectic theory (Dunning, 1980, 1988) were the main underlying theoretical concepts explaining why firms prefer certain regions over others. For instance, labour-intensive tasks intrinsically favour regions with inexpensive labour, such as China, India or CEE, whereas technology-intensive tasks call for more technologically advanced regions (Cohen et al., 2018; Dachs et al., 2019). Similarly, firms that require better control over production processes or a faster response to market demand arguably prefer locations that are closer to home. Theyel et al. (2018) provided a detailed comparison between the rationales of each location option at task level.

Scholarly efforts have also been made on the availability and adoption of advanced technologies, specifically robotics, automation technologies, additive manufacturing and Industry 4.0. Labour-saving technologies (such as automation) alter the cost structure with economies of scale that justify production in high-cost regions, rationalising the backshoring choice (Ancarani & Di Mauro, 2018; Srai & Ané, 2016). On the other hand, advanced manufacturing technologies (such as Industry 4.0) respond to demands for quality and customisation with short lead times, calling for more localised strategies (Dachs et al., 2019). Overall, studies have shown that the availability of advanced technologies in the home country justifies decisions to *backshore*, because of the lowered coordination costs associated with such technologies (Ancarani et al., 2019; Dachs et al., 2019; Fratocchi, 2018). Nevertheless, a majority of backshoring decisions were taken *without* investing in new technologies (Ancarani et al., 2019), and therefore causality should not be drawn between advanced technology and relocation (Ancarani & Di Mauro, 2018; Kamp & Gibaja, 2021). Calculations on productivity-adjusted labour costs should constantly be tracked (Kim & Chung, 2022), as they might trigger different location choices at different time periods (Bárcia De Mattos et al., 2021).

Firm-level factors. Another stream of research looked into the firm-level factors that affect the location decision.

Firms looking to enter a foreign market would logically desire some local presence (Dunning, 1980, 1988). In recent years China has seen rising wage dynamics, but at the same time it offers a huge local market for exploitation, making it more attractive than CEE despite a similar rising wage trend (Kinkel, 2012). Cohen et al. (2018) also provided evidence of market-seeking companies entering China, whereas cost-seeking ones are leaving for even cheaper regions (Cohen et al., 2018). Theoretically speaking, firms with strong networking or relationship capabilities are more competent in operating (or sourcing) from distant regions, since such capabilities effectively lower the transaction costs of distant operations (McIvor, 2013). Similarly, firms with experience in facing strong liabilities of foreignness are more likely to undertake further investments in distant countries than firms without such a capability (Barbieri et al., 2019). Interestingly, however, Boffelli et al. (2020) identified that some firms seem to be clouded by the ‘anchoring effect’ towards a specific region, either at home or abroad, which prevents them from considering location alternatives other than the ones they are already familiar with. Also, during geopolitical disruptions, firms tend to prioritise locations that could either provide ease of access to markets or maintain a smooth flow of goods across the supply chain (Moradlou et al., 2021).

Country-level factors. A third stream of scholarly efforts was focused on the subject of regional attractiveness, which is generally characterized by a range of factors such as location-specific endowments, the overall competitive landscape, the risks of doing business, market potential and governmental policies (Dunning, 2001; Ellram et al., 2013). These factors could also be explained by TCE, since distant coordination, institutional distances and political instability could all lead to potentially opportunistic behaviours that increase transaction costs (Kinkel & Maloca, 2009; Martínez-Mora & Merino, 2014; McIvor, 2013). Additionally, studies have pointed out that countries with established industrial districts or technology clusters could become attractive options, since they essentially reduce the risks and costs of relocating supply chains, as well as providing spillover benefits (Ancarani et al., 2019). Pegoraro et al. (2022); Baraldi et al., 2018; Di Mauro et al., 2018 also regard the systemic commitment of local stakeholders, such as universities or industrial associations, as instrumental in realising reshoring strategies.

Moreover, governmental policies, including monetary and non-monetary incentives, have attracted substantial research interest. These policies contribute to regional attractiveness, as they are generally aimed at reducing operational or transitioning costs (Ancarani et al., 2019), increasing decision-making transparency (Gray et al., 2017), strengthening location-specific advantages or fostering robust local ecosystems (Ancarani et al., 2019; Bailey

et al., 2018; Chen & Hu, 2017). However, scholars have varied opinions on the general effectiveness of some policies. On the basis of the eclectic theory, some scholars have found that monetary incentives, ranging from tax advantages and subsidies to counter-trade requirements, could increase the attractiveness of certain regions (Ellram et al., 2013). Other studies argue that monetary incentives alone are ineffective, further calling for non-monetary initiatives to complement monetary ones in order to strengthen the facilitation effect (Ancarani et al., 2015). Such initiatives include stimulation on technology investment, the introduction of accessible financing options (especially for SMEs), support for capacity and skills development, and the establishment of local production ecosystems (Ancarani et al., 2015; Bailey & De Propriis, 2014).

In sum, the goal of the location choice is to balance the trade-offs, incentives and constraints between various geographical alternatives (Cohen et al., 2018). Reconfigurations of a firm's network, market, project and capability all require continuous reappraisal of location decisions (Srai & Ané, 2016), especially as the attractiveness of each respective region shifts considerably over time (Ellram et al., 2013). However, the current literature body lacks depth in terms of understanding how firms assess and decide on optimum locations, which some studies classify as the 'rightshoring' approach (Hilletofth et al., 2019; Joubioux & Vanpoucke, 2016). There is a noticeable pattern in our reviewed samples, which focus mainly on *ex ante* and *ex post* comparisons, while neglecting the fact that *ex post* decisions are made after a series of locational comparisons. Studies also showed that many empirical studies on relocation have a 'rather narrow geographic focus' (Cohen et al., 2018). Coupled with ownership options in the next section, the nuances from case to case render making accurate predictions about firm behaviours an exceptionally challenging task. Additionally, we believe that more research is needed to explore the context in which decision-makers are more susceptible to various cognitive biases (such as the bandwagon or anchoring effects) and whether decisions are influenced by their previous offshoring and reshoring experiences, resulting in signs of locational path dependence. After all, it is the alignment of a firm's strategy with its competitive priorities that determines the optimal location (Johansson et al., 2019).

Ownership choice

The second dimension of the relocation decision is the choice of ownership modes. Some studies used the term 'entry mode' to describe the ownership choice, but either way these terms essentially refer to the governance (or internalisation) aspect of the relocated activities. Despite

the existence of a spectrum of ownership modes, from pure subcontracting to wholly owned subsidiaries, our reviewed literature sample predominantly clustered them into *equity* (i.e. insourcing, having at least partial ownership of the activities in question) and *non-equity* (i.e. outsourcing, entirely contracted out to external entities) modes (Pan & Tse, 2000).

Several theories were applied to explain why some firms opt for manufacturing in-house while others choose to procure from subcontractors. TCE focuses on searching for optimal efficiency in terms of governance modes, mirroring the classic 'make or buy' decision. From the TCE perspective, making the ownership choice is essentially managing the trade-off between control and the cost of resource commitment under given risks and uncertainties while preserving flexibility (Anderson & Gatignon, 1986). Specifically, the equity mode reduces reliance on external partners, overcomes monitoring and control issues, alleviates cultural disturbances, and mitigates IPR infringement risks (Huq et al., 2016; Wan et al., 2019a). Likewise, the 'internalisation advantages' of the eclectic theory somewhat resemble TCE in this regard, focusing on whether it is more sensible for a firm to perform specific operations in-house or to outsource to foreign entities (Dunning, 1980, 1988).

On the other hand, the resource-based view (RBV) of the firm (Barney, 1991; Peteraf, 1993) offers an alternative theoretical lens that illuminates how various resources (both tangible and intangible assets) in different locations could be exploited to a firm's competitive advantage, which in turn informs the optimal ownership mode. Similarly, the eclectic theory uses the notion of 'ownership advantages' to describe these spatially transferable intangible assets that lead to a firm's competitive advantage (Dunning, 1980, 1988).

The internalization theory (Casson, 2013) further combines the two aforementioned perspectives and provides an integrated analysis of all location and ownership decisions, arguing that only supply chains with efficient configurations are able to survive. From this perspective, firms are predicted to seek the least costly configuration subject to the structure of market demand. The theory offers a model for firms that could solve the optimal location and ownership combination in global supply chain competitions.

Overall, these conceptualizations offer complementary perspectives on how a firm chooses its ownership mode on a relocation project. The majority of arguments made in relocation studies were based on these four theories, and we have again categorised the findings based on three levels of analysis: *task-level*, *firm-level* and *country-level*.

Task-level factors. First, studies indicate several task-level factors that favour the equity mode. These studies

primarily draw on the increased strategic focus on product innovation strategies, and these strategies call for the coupling of production–development or production–marketing, which are best suited to an intra-firm (i.e. equity) mode because of the lower coordination costs (Wan et al., 2019a). In addition, these innovation strategies often require highly specific assets (such as Industry 4.0) that strengthen such coupling, as well as enabling smoother integration between production processes and suppliers (Ancarani et al., 2019; Dachs et al., 2019). Finally, the general shortage of suitable suppliers or appropriate labour in the home environment mandates the substitution of technology for labour when firms consider backshoring (Ancarani et al., 2019; Wan et al., 2019a).

Firm-level factors. Second, there are *firm-level factors* that affect the ownership choice. Wan et al. (2019a) identified the path dependence effect on insource reshoring, suggesting that insource offshorers tend to retain the equity mode when reshoring. As the RBV perspective suggests, the established processes and refined routines in a firm's previous location might lead to certain competitive advantages that can only be preserved if the firm stays insourced and replicates them in the new location (Barney, 1991; Peteraf, 1993). In this regard, Dachs et al. (2019) also noted that insource offshorers are more capable of assessing the advantages and disadvantages of various location options, and therefore insource offshorers are more aware of, and willing to take on, backshoring options than outsourced offshorers.

Country-level factors. Finally, there are *country-level factors* that impact how firms choose entry modes. Countries with legal restrictions (such as China) naturally eliminate the choice of running plants entirely insourced and force firms to outsource to a certain degree (Wan et al., 2019a). In addition, the liabilities of foreignness drive firms with high perceived institutional distances towards outsourcing as a low-commitment solution (Wan et al., 2019a). Moreover, the existence of industrial clusters makes outsourcing to specific regions an especially attractive choice (Wan et al., 2019a). Most importantly, deteriorated manufacturing capabilities in developed regions eliminate the odds of outsourcing, at least in the short term. Scholars have argued that the reason why many backshored projects were insourced was likely to be a result of the deterioration of supply chains in developed economies rather than an intentional managerial choice (Ancarani et al., 2019; Di Mauro et al., 2018; Wan et al., 2019a).

Together, existing papers have demonstrated a variety of implications for how firms decide on ownership given their specific location options. Nevertheless, only a handful of studies have specifically analysed ownership choices under mixed contexts. We argue that ownership choices should be explicitly connected with various loca-

tion contexts (such as nearshore vs backshore), allowing comparisons to be made. For instance, investigations could be made on whether specific combinations are more feasible than others under characterizable conditions, while considering other firm-level factors (if any) that play a role in the decisions.

Decision moderators

Our review of the extant research also uncovered several factors that moderate the overall propensity to relocate production or shape decisions one way or another. These include *universal barriers*, *case-specific characteristics* and *managerial cognition*. Moderators could be seen as elements that influence multiple drivers (Martínez-Mora & Merino, 2020) and therefore cause certain choices (ownership, location or the relocation decision itself) to become more or less appealing.

Universal barriers. Our review sample highlighted multiple barriers preventing firms from engaging in relocation. Studies identified **offshoring dependence** as one of the most prominent barriers, including the risk of losing raw materials, the foreign market, distribution channels or supplier knowledge (Dachs et al., 2019; Ellram et al., 2013; Kinkel & Maloca, 2009). On the other hand, **destination resource shortage** has also been recognised as a significant barrier to relocation, especially for developed economies. A diminished (or immature) supplier base or infrastructure, a lack of critical materials and a shortage of qualified or flexible labour all pose challenges to relocating production (Bailey & De Propris, 2014; Uluskan et al., 2016). In addition, the studies suggested that the existence of high-productivity suppliers is considered a determinant for firms looking to backshore (Bailey et al., 2018). Firms' dependence on offshore suppliers will not be relieved until the resource shortages in the destination regions are satisfied, and ignorance of such dependence might result in an overestimation of the responsiveness advantage, leading to false optimism about reshoring (Chen & Hu, 2017).

Moreover, **firm capability shortage** also acts as a notable barrier, especially for SMEs (Kinkel & Maloca, 2009). The lack of capacity, funding, resources and internal capability (Bailey & De Propris, 2014), coupled with the general **lack of decision support and data** that backs decision-making (Arlbjørn & Mikkelsen, 2014), increase the overall difficulty of relocation. Furthermore, several studies on outsourced firms suggest that critical knowledge and capabilities deteriorate over **time**, to the extent that it might no longer be practical for outsourced firms to backshore (Nujen et al., 2018, 2019; Halse, 2020).

Finally, **sustainability regulations** that typically exist in developed countries would theoretically increase the

cost of compliance and therefore decrease location attractiveness, as suggested by the pollution haven hypothesis (Wagner & Timmins, 2009). However, Gray et al. (2013) proposed a counter-intuitive assertion that environmental regulations that police the entire supply chain, such as carbon labelling, might favour reshoring, as they strengthen a region's location-specific advantages, despite no further evidence being found to support this proposition (Barbieri et al., 2018; Fratocchi & Di Stefano, 2019a; Gray et al., 2017).

Case-specific characteristics. Universal factors aside, there are obviously differences regarding each relocation case. However, several themes of case-specific characteristics were repeatedly discussed in multiple studies. A major stream of literature investigated whether **company size** moderates the propensity to relocate production. Scholars generally agree that larger firms are presented with more relocation opportunities given their wider exposure to various locations, stronger integration with GVCs and better financial and operational flexibility (Dachs et al., 2019; Lampón & González-Benito, 2020). In contrast, smaller firms are more susceptible to decision-making errors and are therefore often forced to backshore, because of the lack of critical tools, experience, management and financial resources to properly evaluate offshoring decisions (Ancarani et al., 2015; Dachs et al., 2019; Kinkel & Maloca, 2009). Moreover, scholars proposed that SMEs are prone to earlier reshoring (Ancarani et al., 2015) and tend to outsource rather than insource (Wan et al., 2019a) because of their weaker capabilities and lower resource availability, which result in low tolerance to risk and uncertainty, especially in troubled times such as global recessions (Kinkel, 2012).

Another stream of research focused on the moderating effects of **product complexity** or **capital intensiveness** of a firm's operations. Technology-, R&D- or capital-intensive firms usually possess higher asset specificity (Foerstl et al., 2016) and generally require higher levels of innovation; therefore, they are more likely to be incentivised to bring value chains closer (often through the equity mode) in order to reap the benefits of co-locating R&D and manufacturing, as well as innovation spillovers from spatial embeddedness (Bailey et al., 2018; Di Mauro et al., 2018). These firms also tend to adopt advanced manufacturing technologies, such as Industry 4.0, upon backshoring (Dachs et al., 2019). Moreover, for outsourcing firms, higher knowledge intensiveness leads to more willingness to switch sourcing to the home economy from abroad (Bailey et al., 2018). In short, in contrast to labour-intensive firms, technology-intensive firms that involve complex manufacturing (such as electronics and automotive) are more likely to reshore their operations (Ancarani et al., 2015; Johansson & Olhager, 2018b).

Other case-specific characteristics such as **market segmentation** (Martínez-Mora & Merino, 2014), the existence of **distinctive competitive strategies** (Uluskan et al., 2017) and the degree of **patriotism** shown among entrepreneurs (Canham & Hamilton, 2013) were also identified as having moderating effects. However, these studies are generally limited to specific industrial contexts, and therefore we argue that sectoral analyses should be further performed and motives cross-compared in order to create more generalizable results.

Managerial cognition. In addition, the behavioural aspect of relocation decision-making also seems to have a moderating effect. Specifically, we are looking at the 'managerial cognition' behind such decisions, which is how managers 'perceive' their relocation rationales. There has been an ongoing academic debate between what we categorise as the 'corrective narrative' vis-à-vis the 'adaptive narrative'.

Studies from the *corrective narrative* argue that relocation engagements are corrections of previous strategic misjudgements, since companies tend to overestimate cost benefits and underestimate offshoring risks and performance challenges (Engström et al., 2018; Gray et al., 2013, 2017; Gylling et al., 2015; Johansson et al., 2019; Kinkel & Maloca, 2009; Srai & Ané, 2016). Moreover, studies in this group generally consider decisions to be susceptible to availability bias or the 'bandwagon effect', and therefore over-hasty decisions are often made (Gray et al., 2013; Wiesmann et al., 2017).

On the other hand, studies that opted for the *adaptive narrative* suggest that relocation decisions are dynamic responses to changing business environments (Baraldi et al., 2018; Di Mauro et al., 2018; Fratocchi et al., 2015; Grappi et al., 2018; Martínez-Mora & Merino, 2014; Tate, 2014). Scholars in this stream generally argue that several factors triggering relocation could not have been foreseen (Martínez-Mora & Merino, 2014), and a global field study conducted in 2014 and 2015 across a wide range of industries showed that reshoring rarely occurs for corrective reasons (Cohen et al., 2018).

Both streams of study provide logical reasoning and empirically based evidence, suggesting that neither conclusion is incorrect and that both types of managerial cognition exist under different circumstances. Future research could progress understanding by distinguishing and comparing decisions made under both narratives, and by investigating how decision patterns differ (if at all) when managers perceive situations in different ways (Bals et al., 2016). Additionally, we propose that major operational or political disruptions should be taken into consideration, as such events seem to alter managers' perceptions of problems (Barbieri et al., 2020).

Decision-making and implementation

Coupling location and ownership options, firms are expected to go through multiple rounds of assessments, trials or evaluations before settling on final decisions. Our reviewed literature sample provides various insights on the planning, weighing and implementing processes. Meanwhile, it is important to note that some options were ruled out in existing studies either for simplification purposes or because these options were unavailable at the time of research. This does not necessarily indicate the invalidity of these options in the (potentially near) future.

Strategic planning and risk management. From the TCE perspective, a rational firm would conduct a thorough cost/benefit analysis, which fundamentally relies on the calculations of transactional costs for each location alternative, and opt for the option with the lowest transactional costs, respectively (McIvor, 2013). Similarly, from the RBV perspective, the same firm would assess its critical competencies that yield a competitive edge and map out geographic availabilities. Similar to the initial offshoring decision, the relocating decision would involve assessments of a firm's strategy, risks, opportunities and constraints (Joubioux & Vanpoucke, 2016). From a risk management perspective, the nature of market competition essentially causes firms to resort to suboptimal options. For instance, Jung (2020) showed that outsourcing firms might lose profit by sourcing both domestically and internationally, but firms would still opt for dual-sourcing under competition despite single-sourcing yielding Pareto-efficient outcomes. Similarly, Sardar et al. (2016) also argued that sharing risks by combining domestic and international sourcing is a sustainable outsourcing strategy.

Our reviewed sample has also provided several risk management and strategic planning tools that aid firms in their decision-making, including the classic *total cost of ownership* (Tate et al., 2014), *sensitivity analyses* (Gylling et al., 2015), the *scope model* (Schmidt et al., 2017), the *system dynamics model* (Gray et al., 2017) and the *organisational readiness evaluation* (Nujen et al., 2019). The existence of these tools demonstrates the complexity of relocation decisions. A complete analysis of all the costs and benefits would be extremely costly (if not impossible) to carry out, given the inaccurate nature of forecasts with all the uncertainties in the equation (Boffelli et al., 2018). However, acquiring the necessary information is vital to success, and therefore firms are encouraged to delay the decision-making process should they lack critical information (Hartman et al., 2017). Furthermore, aside from being aware of the previously mentioned bandwagon effect (Gray et al., 2013) and anchoring effect (Boffelli et al.,

2020), decision-makers are advised to avoid the temptation for 'emotional reshoring' whenever possible (Boffelli et al., 2018). Lastly, decision-makers' perceptions of disturbances and risks might also be biased by their functional boundaries (Ciabuschi et al., 2019; Huq et al., 2021), especially under situations of heightened uncertainty such as geopolitical disruptions (Moradlou et al., 2021).

Decision-making and implementation process. Existing studies have also provided documented processes of developing and implementing relocation decisions. Some were derived from theories and literature (e.g. Bals et al., 2016; Boffelli & Johansson, 2020), while others were revised based on empirical evidence (e.g. Benstead et al., 2017; Boffelli et al., 2018; Boffelli et al., 2020; Eriksson et al., 2021; Joubioux & Vanpoucke, 2016). Many studies recognise the entire process to be non-linear or cyclical in nature, with looping elements reflecting the constant trial-and-error situations observed in practice; they also recognise that it is crucial to test decisions by taking incremental steps or doing pilot runs (Boffelli et al., 2018; Nujen et al., 2019). In general, although the detailed implementation stages differ from case to case, our C-D-E decisional framework appears to cover all major processes, from assessing the current situation, to collecting data and weighing options, and disintegrating and reintegrating value chains.

As our knowledge in this area expands, we believe that further efforts should be focused on developing a comprehensive decision-making procedure or system that allows unbiased judgements to be made. In addition, future works could shed light on the critical success factors or win conditions of relocation projects, as studies proposed that successful implementation is more important than making the right decision in the first place (Boffelli et al., 2021). It would also be beneficial if there were a consensus about what defines 'success' in relocation. Studies could also investigate the extent of information that is required for firms to make well-informed decisions (Barbieri et al., 2018). Finally, further studies are encouraged to look at decision-making under high complexity from behavioural or psychological aspects, essentially lifting the rationality assumptions of existing theories to allow more practical implications.

Relocation outcomes

Ultimately, a relocation project finishes with evaluation of its outcomes post-implementation, which is also an underdeveloped area of relocation research. Contributions to this particular topic have been made on two levels: *firm-level* and *region-level*. The former provides guidelines for

practical cost/benefit evaluations, while the latter offers policy implications for governments or policy-makers.

Financial performance. The first *firm-level* outcome concerns the *financial performance* of relocated firms. Few studies provided empirical evidence of increased profitability, not because of reduced costs (Stentoft et al., 2018) but mainly because of improved flexibility by relocating closer to end-markets (Gray et al., 2017; Yu & Kim, 2018). Additionally, Brandon-Jones et al. (2017) studied the effects of reshoring announcements on a firm's stock price and showed a statistically significant association, indicating that investors generally recognise the benefits of production relocation for firm performance. Nevertheless, Chen and Hu (2017) believe that such a rise in profitability from reshoring might be situational until dependence on offshore suppliers is resolved, since such dependence essentially impedes firms' responsiveness to demand. Overall, empirical evidence is still scarce on the profitability aspect, and the overall generalisability remains a concern. A possible reason for this, in addition to being an emerging area of study, is that casual relationships could not easily be drawn, as location decisions are not the sole contributing factor to profitability fluctuations.

Operational performance. In terms of *operational performance*, studies demonstrated gains in competitiveness associated with relocation decisions, generally as a result of increased productivity and resilience. The improvements are shown to stem from greater labour optimisation, a higher technological level and greater asset orientation (Lampón & González-Benito, 2020). However, such a performance gain is dependent on the fit of relocated activities with the local networks and capabilities (Baraldi et al., 2018). In terms of resilience, studies showed that the diversification of suppliers led by reshoring practices enhances network resilience (Choudhary et al., 2022). Similar to profitability, productivity is an under-researched field. We find that studies comparing productivity before and after relocation are surprisingly lacking, and we further encourage systematic comparisons on productivity between various location-ownership combinations to be conducted.

Organizational learning. With respect to *organizational learning*, Martínez-Mora and Merino (2014) showed evidence of firms obtaining advantages through the development of commercial ties in foreign markets, which facilitated the subsequent entry and growth of their exports to said markets post-reshoring. One of the cases in Huq et al. (2016) study was observed to have developed capabilities by absorbing knowledge from its best outsourcing partners. Studies also demonstrated that backshoring firms transform the use of resources instead of simply duplicating offshore relationships, and firms reconfigure supply chains to exploit the unique benefits of domestic produc-

tion (Gray et al., 2017; Lavissière et al., 2016). Evidence from the study of Nujen et al. (2018) further suggests that backshoring leads to the awareness of lost capabilities and reinforces internal knowledge-sharing, resulting in better post-reshoring operations and competitive advantage. However, the same authors emphasised that backshoring might be time-sensitive and that the longer that operations are outsourced, the harder it is to resuscitate the relevant capabilities (Nujen et al., 2018, 2019).

Nevertheless, there seems to be a knowledge mismatch problem that leads to biased risk perceptions and diverse tolerances across the different roles of a firm. Ciabuschi et al. (2019) argued that experiential learning occurs locally (i.e. the *host* region) but that relocation decisions are generally heavily influenced by headquarters (in the *home* country) that have comparably less—and arguably different sets of—experience-based knowledge. The results from Huq et al. (2021) also suggest that internal-facing managers tend to be more myopic than their external-facing counterparts, causing difficulties in properly mitigating risks.

Moreover, it has been widely studied in offshoring literature that higher levels of offshoring experience lead to better assessment of cost, performance and possible problems, resulting in a higher likelihood of taking additional offshoring actions (Gray et al., 2017). However, a similar argument could not yet be made under the reshoring context, as the impact of previous location decisions on future relocation decisions (i.e. the C-D-E looping aspect) remains unknown (Hilletoft et al., 2019). However, in this regard, Boffelli et al. (2021) proposed that reshoring firms do not suffer from the same types of mistake as they did during offshoring. In a similar vein, Canello (2022) argues that mimetic isomorphism (leading to the 'bandwagon effect') is only detected in initial offshoring practices and not in secondary relocation decisions, showing that firms either learnt from their foreign engagements or possess existing domestic relationships for exploitation. We recommend that future studies investigate the roles and effects of organisational learning by looking at the evolution of a firm's competencies, utilising a 'portfolio' view of relocation projects as the unit of analysis. Additionally, comparisons on decision-making, implementation and performance between firms with and without abundant offshoring experience would be greatly insightful, as we could then analyse the contributing elements of successful decisions.

Employment and economic growth. Discussions on the *regional level* are mainly concentrated around employment and economic performance. Many studies contributed to the widespread debate about whether backshoring brings jobs back to developed nations. The general consensus is that reshoring to developed economies would

'bring back' fewer jobs but secure highly skilled positions as a result of increased productivity and the wider utilization of automation (Bailey & De Propris, 2014; Dachs et al., 2019), henceforth increasing inequality (Krenz et al., 2021). However, one should avoid merely focusing on the number of jobs that reshoring projects create, as the general revival of the local manufacturing base would in turn create more jobs in not only manufacturing but also the complementary service sectors (Bailey et al., 2018). On the other hand, Faber (2020) presented empirical evidence from Mexican data showing that robotics deployed in developed countries (i.e. *home* countries in most cases) have a significant negative effect on the employment of *host* (i.e. *offshored*) countries.

Our analysis shows that the empirical evidence to date has not been sufficient for wider macro-economic implications (such as economic performance or welfare) to be drawn. Therefore, we suggest that future research should engage in longitudinal efforts for more in-depth examination on regional levels and that it should place less emphasis on superficial policy statements. Furthermore, a research focus could be placed on investigating the impacts on regional manufacturing 'capabilities' as a result of the relocation trend, especially following the revival of high-value manufacturers tending to provide spillover benefits across sectors and industries (Huq et al., 2021). It would also be interesting to explore knowledge and information flows from relocation efforts and their influences on regional innovation ecosystems.

AVENUES FOR FUTURE RESEARCH

The systematic literature review that we conducted on manufacturing relocation presents a clear picture of what we currently know and what is missing. To advance our knowledge in this subject area, we identified various gaps while reviewing the seven decisional aspects of relocation in the previous sections, and we proposed three integrated research directions for future academic work. Unlike offshoring decisions, many aspects of relocation decisions were based on conceptual propositions with limited empirical evidence. A summary of these future research directions is provided in Table 2.

Emphasize the cyclical nature (the 'loop' attribute) of relocation decisions

In our review, we noticed that most studies addressing relocation decisions tend to focus on individual decisions without considering their cumulative effects. Specifically, these studies often fail to examine how one relocation

decision (be it offshoring or reshoring) influences subsequent ones. This oversight neglects the cyclical nature of relocation, as illustrated in our C-D-E framework. Given the ongoing trends in relocation, it's inevitable that firms will repeatedly engage in this decision-making process. The outcomes of earlier relocation decisions are likely to inform, if not heavily influence, the initial stages of subsequent decisions. This gap in our understanding presents a significant impediment to grasping the full picture.

There's a growing consensus on this issue, with calls for deeper insights into how past decisions influence future relocation considerations (as noted by Barbieri et al., 2019). There's also a push for longitudinal studies that track operational improvements over various location decisions, such as those suggested by Stentoft et al., 2018, and Lampón & González-Benito, 2020. From our standpoint, examining the execution of relocation decisions provides an ideal lens to understand organizational learning and its influence on international manufacturing perceptions. Moreover, there's a pressing need for empirical data regarding the outcomes of relocation decisions—specifically, their impacts on productivity, profitability, and capabilities—and whether these outcomes subsequently shape future relocation efforts. It would be equally valuable to explore if the rejuvenation of regional capabilities and the resurgence of local production ecosystems, driven by sustained reshoring, further encourage reshoring initiatives (Dachs et al., 2019).

Introduce multi-disciplinary theories to further incorporate the recent evolution of GVCs

The existing research landscape reveals significant gaps in our understanding of relocation and its accompanying decision-making processes. While predominant theories like TCE, RBV, and OLI have provided foundational insights into location theories and organizational behaviours, the rapid evolution of the GVC has outpaced their explanatory power. In many instances, these theories no longer elucidate internal decision-making comprehensively or accurately predict firm behaviours under specific conditions.

Examining the broader perspective, the pandemic has accelerated discussions on relocation, resilience, diversification, risk management, and governance as key trajectories for GVC development (Kersan-Škabić, 2022). While many of these topics were in discourse even before the pandemic, the crisis expedited their evolution (Elia et al., 2021). Ryan et al. (2022) offers insights into potential GVC configurations, suggesting that efficient and resilient structures might coexist under hierarchical governance.

TABLE 2 Future research directions.

Decisional aspect	Future research directions
Conceptual incubation	- Focus on the relevance of various drivers to individual firms- Investigate how the sustainability aspect could potentially influence the motivations for relocation- Study the impact of previous location decisions and organizational learning on relocation drivers
Tipping points	- Investigate how a firm's strategy or competitive priority makes perceptual differences in the valuation of various drivers- Examine the relevance of drivers by comparing relocated firms with non-relocated ones- Study how the criticalities of various drivers shift over time by analysing the characteristics of various global crises- Analyse how geopolitical dynamics affect the relevance of relocation drivers, as well as how decision-makers respond to these events
Location choice	- Study how regional attractiveness changes through periodic audits or longitudinal analyses- Investigate additional factors (especially firm-level) to understand how business strategies shape the assessment and selection of optimal locations- Explore the context in which decision-makers are susceptible to various cognitive biases or influenced by previous experiences
Ownership choice	- Compare entry-mode decisions under different location choices- Investigate whether specific location-ownership combinations are more feasible under characterizable conditions than others- Consider other firm-level aspects that are factored into decisions
Decision moderators	- Perform sectoral analyses and cross-compare the motives, as well as the tipping points between various industries- Investigate the decision-making patterns under different managerial cognitions- Study the effects of major disruptions on managers' perceptions of situations
Decision-making and implementation	- Develop a comprehensive decision-making procedure or system that allows unbiased judgements to be made- Understand the critical success factors or win conditions of relocation projects- Investigate the extent of information needed for firms to make well-informed decisions- Study high-complexity decision-making in relation to behavioural or psychological aspects and lift the rationality assumptions of existing theories
Relocation outcomes	- Compare profitability and productivity before and after relocation, as well as the outcomes of various location-ownership combinations- Study how the degree of offshoring experience affects relocation decisions in terms of decision-making, implementation and performance- Engage in longitudinal efforts for more in-depth examination on regional levels, while placing less emphasis on superficial policy statements- Investigate the impacts on regional manufacturing capabilities as a result of the relocation trend, considering the spillover benefits from the revival of high-value manufacturing- Explore knowledge and information flows from relocation efforts and their influences on regional innovation ecosystems
Integrated research directions	
- Emphasize the cyclical nature (the 'loop' attribute) of relocation decisions	
- Introduce multi-disciplinary theories to further incorporate the recent evolution of GVCs	
- Combine decisional aspects towards a wider policy and macroeconomic debate	

Introducing the *dynamic capabilities* perspective (Tece et al., 1997) into this discourse can guide future research on firms' adaptability within the GVC, particularly in navigating crises and plotting sustainable growth trajectories.

Zooming into an internal, firm-centric lens, our analysis points to a range of disciplines that could deepen our understanding of relocation decision-making. While the concept of *organizational learning* (Levitt & March, 1998) has been acknowledged, its application in relocation research remains limited. Additionally, we advocate for an increased integration of theories that delve into behavioural nuances. Approaches like the *institutional logics perspective* (Thornton et al., 2012) or *managerial cognition* (Stubbart, 1989) provide rich frameworks to explore how businesses assess risks, navigate uncertainties, and adapt to regulatory or normative changes. By re-evaluating

traditional notions of firm rationality, we can potentially uncover organizational dynamics, such as hierarchical versus flat structures, that could influence managerial behaviour and, by extension, impact key decision-making processes.

Combine decisional aspects towards a wider policy and macroeconomic debate

Even before the pandemic, reshoring debates pervaded global policy discourse. However, these discussions often leaned towards political rhetoric rather than empirical or theoretical foundations. The subsequent pandemic-induced supply chain disruptions amplified calls for nations to cultivate industrial resilience and rethink supply

chains. Policies like the US and UK's 'Build Back Better' emerged, advocating for investment and growth. Yet, questions loom regarding their actual impact on resilience, national welfare, and whether they truly serve the broader population. Contrary to the political promise of restoring jobs, research suggests reshoring often brings back roles requiring higher skills, potentially exacerbating economic inequality (Bailey et al., 2018; Dachs et al., 2019). Furthermore, the economic wisdom of side-lining the principle of comparative advantage in favour of less efficient regional supply chains remains debatable. Weldzius (2021) posits that while reshoring may reduce external disruptions, it could compromise efficiency, competitiveness, and reintroduce problematic practices like currency manipulation.

The academic community has a pivotal role in guiding governments towards empirically grounded strategies and gauging the long-term implications on regional economic and social landscapes. A glaring gap exists in evaluating policy performance. As Miroudot (2020) pointed out, governments, while eager to respond to global challenges, often grapple with determining the best course of action. How should they prioritise resource allocation between talent development and infrastructure enhancement? What is the role of interim measures like tax cuts, tariffs, and subsidies? Furthermore, with many nations earmarking sectors like semiconductors and medical supply chains for reshoring, there is a pressing need for deeper sector-specific research. This would ensure that substantial public investments are underpinned by rigorous academic insight.

Internationally, studies observe collaborative endeavours to create conducive policy environments (Hall & Milne, 2019). Pegoraro et al. (2022) illustrate how regional adoption of industrial policies can enhance a region's appeal for manufacturing reshoring, catalysing a virtuous cycle in regional value. As countries navigate their best paths forward, studies probing relocation from a company's viewpoint, including regional capability evolution and reshoring, become indispensable. Observing how governments incentivise alignment between corporate actions and national strategies can illuminate the balance between resilience and profitability. Moreover, it's essential to critically evaluate political objectives as they often stand in contrast to established economic and international business theories.

LIMITATIONS AND CONCLUDING REMARKS

In an evolving global landscape, the manufacturing relocation phenomenon is both timely and critically relevant. We

anticipate a shift towards a world less anchored by globalisation, giving rise to fragmented regional supply chains and novel industrial ecosystems. This paper presents a multifaceted academic contribution. We have rigorously reviewed and unified various relocation terminologies into a coherent taxonomy, aiming to clarify existing ambiguities and lay the groundwork for new ideas and concepts. Building upon Barbieri et al. (2018), our study delves into the often-overlooked cyclical decision-making processes, highlighting the unique value of our research. Additionally, our discussion broadens to encompass the 'tipping-point' in motivation, as delineated by Hartman et al. (2017), and incorporates pressing global matters like the pandemic, geopolitical shifts, and contemporary policy debates. Echoing a recommendation from Barbieri et al. (2018), we have expanded our exploration beyond the conventional reshoring narrative to encompass the broader spectrum of relocation strategies, often referred to as the 'rightshoring' approach. With our paper's robust and replicable methodology, we are setting the stage for future academic pursuits, offering direction for ensuing research and integrative scholarly pathways.

Yet, our research is not without its limitations. A significant portion of existing literature is exploratory or descriptive in nature, which inherently constrains the breadth and application of our findings. While our study strives for inclusivity, incorporating a broad range of scholarly works, we have omitted grey literature, potentially overlooking some valuable insights. Despite our rigorous approach in evaluating and focusing on high-quality literature, many of the assertions remain propositions, echoing the scholarly community's call for enhanced empirical validation. Furthermore, recognising the inherent lag in academic publications, emerging insights on this rapidly evolving topic might experience slight delays in scholarly validation.


In sum, our ambition is for this study to act as a bridge, mending the rifts in current academic discourse. We are fervently advocating for further research in the relocation domain, emphasizing empirical validation. Ultimately, deepening our understanding of manufacturing location choices has the potential to benefit not only the business community but also policy-making circles. Our role, as management scholars, is pivotal in directing both industry and governance towards informed decisions, negating resource wastage due to gaps in information or knowledge.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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APPENDIX A EXTANT LITERATURE

Authors (Year)	Conceptual incubation	Tipping point	Location choice	Ownership choice	Decision moderators	DM and implementation	Relocation outcomes
Ancarani and Di Mauro (2018)	x			x	x		
Ancarani et al. (2015)	x				x		
Ancarani et al. (2019)	x				x		
Ancarani et al. (2021)	x				x		
Arlbjørn and Mikkelsen (2014)	x				x		
Ashby (2016)	x		x		x		
Bailey and De Propriis (2014)	x				x		x
Bailey et al. (2018)			x		x		x
Baldwin and Venables (2013)			x				
Bals et al. (2016)	x	x	x	x	x	x	x
Baraldi et al. (2018)	x	x	x		x	x	
Barbieri et al. (2018)	x	x	x		x	x	
Barbieri et al. (2019)			x		x		
Barbieri et al. (2020)		x			x		
Barbieri et al. (2022)			x		x		
Bárcia De Mattos et al. (2021)	x		x		x		x

(Continues)

Authors (Year)	Conceptual incubation	Tipping point	Location choice	Ownership choice	Decision moderators	DM and implementation	Relocation outcomes
Benstead et al. (2017)	x	x	x	x	x	x	
Boffelli et al. (2018)		x			x	x	
Boffelli and Johansson (2020)	x	x	x	x	x	x	x
Boffelli et al. (2020)					x	x	
Boffelli et al. (2021)					x	x	
Brandon-Jones et al. (2017)							x
Butollo (2021)			x		x		
Canello (2022)			x				
Canello et al. (2022)				x			x
Canham and Hamilton (2013)	x		x				
Carbone and Moatti (2016)	x				x	x	x
Cassia (2020)							x
Castañeda-Navarrete et al. (2021)	x	x					
Chen and Hu (2017)					x		x
Chen et al. (2022)	x				x		
Choudhary et al. (2022)							x
Ciabuschi et al. (2019)			x		x	x	x
Clarke-Sather and Cobb (2019)							x
Cohen et al. (2018)	x		x		x		
Cosimato and Vona (2021)	x					x	
Dachs et al. (2019)	x				x		
Dachs et al. (2019)	x				x		
Di Mauro et al. (2018)	x		x	x	x		
Di Mauro and Ancarani (2022)	x						
Elia et al. (2021)		x					x
Ellram (2013)			x	x	x		
Ellram et al. (2013)	x		x				
Engström et al. (2018)	x				x		
Eriksson et al. (2021)	x					x	x
Faber (2020)							x
Fjellstrom et al. (2019)	x					x	
Foerstl et al. (2016)	x		x	x			
Fratocchi et al. (2014)	x		x		x		
Fratocchi et al. (2016)	x						
Fratocchi (2018)				x	x		
Fratocchi and Di Stefano (2019a)	x				x		x
Fratocchi and Di Stefano (2019b)	x	x	x	x	x	x	x

(Continues)

Authors (Year)	Conceptual incubation	Tipping point	Location choice	Ownership choice	Decision moderators	DM and implementation	Relocation outcomes
Fratocchi and Di Stefano (2020)	x				x		
Gadde and Jonsson (2019)	x		x		x		
Giammetti et al. (2022)			x				
Gijsbrechts et al. (2022)						x	
Gong et al. (2022)	x	x	x				
Grandinetti and Tabacco (2015)			x		x		
Grappi et al. (2015)	x						x
Grappi et al. (2018)	x						x
Grappi et al. (2020)							x
Gray et al. (2013)	x		x	x	x		x
Gray et al. (2017)	x				x	x	x
Gylling et al. (2015)	x					x	x
Halse (2020)					x		
Harris et al. (2020)		x			x		
Hartman et al. (2017)		x	x	x	x		
Hartman et al. (2017)		x		x			
Heikkilä et al. (2018)	x				x		
Hilletoft et al. (2019)	x		x	x	x		x
Hilletoft et al. (2019)						x	
Hilletoft et al. (2021)						x	
Huq et al. (2016)	x		x	x	x		
Huq et al. (2021)	x		x	x	x	x	x
Johansson and Olhager (2018a)	x		x				x
Johansson and Olhager (2018b)	x		x	x	x		
Johansson et al. (2019)	x				x		x
Joubiou and Vanpoucke (2016)	x					x	
Jung (2020)			x				
Kaivo-Oja et al. (2018)	x		x		x		
Kamakura (2022)	x	x	x		x		
Kamp and Gibaja (2021)		x	x				
Kandil et al. (2020)	x		x	x			
Kang et al. (2020)	x	x					
Kazmer (2014)							x
Kersan-Škabić (2022)		x					
Kim and Chung (2022)					x	x	x
Kinkel (2012)	x	x	x		x		
Kinkel (2014)	x			x			
Kinkel and Maloca (2009)	x		x		x	x	
Krenz et al. (2021)			x				x

(Continues)

Authors (Year)	Conceptual incubation	Tipping point	Location choice	Ownership choice	Decision moderators	DM and implementation	Relocation outcomes
Kurata et al. (2020)		x					x
Lampón and González-Benito (2020)			x				x
Lavissière et al. (2016)							x
Li (2020)		x				x	
Lund and Steen (2020)	x		x		x		
Martínez-Mora and Merino (2014)	x		x		x		x
Martínez-Mora and Merino (2020)	x				x		
McIvor and Bals (2021)	x			x		x	
Merino et al. (2021)	x		x		x		
Miroudot (2020)		x					x
Młody and Stepień (2020)	x				x		
Moore et al. (2018)	x				x		
Moradlou et al. (2017)	x						
Moradlou and Tate (2018)	x				x		
Moradlou, Fratocchi et al. (2021)	x				x		x
Moradlou et al. (2021)	x	x	x			x	
Moretto et al. (2020)	x		x	x		x	
Nujen et al. (2018)					x		x
Nujen et al. (2019)					x	x	
Pal et al. (2018)	x				x		
Panova and Hilletofth (2017)	x		x				
Panwar et al. (2022)		x					x
Pegoraro et al. (2022)					x		x
Pla-Barber et al. (2021)		x	x				
Podrecca et al. (2021)	x	x			x		
Presley et al. (2016)			x				
Radi et al. (2021)	x		x		x		x
Rainnie (2021)					x		
Rasel et al. (2020)			x		x		
Robinson and Hsieh (2016)	x						x
Ryan et al. (2022)						x	x
Sansone et al. (2020a)					x		
Sansone et al. (2020b)					x		
Sardar et al. (2016)			x				
Sayem et al. (2019)					x		
Schmidt et al. (2017)						x	
Sequeira et al. (2021)						x	
Sirilertsuwan et al. (2018)	x		x				x
Sirilertsuwan et al. (2019)					x		
Srai and Ané (2016)	x				x		

(Continues)

Authors (Year)	Conceptual incubation	Tipping point	Location choice	Ownership choice	Decision moderators	DM and implementation	Relocation outcomes
Stentoft et al. (2016b)	x						
Stentoft et al. (2016a)							x
Stentoft et al. (2016)	x						
Stentoft et al. (2018)	x						x
Strange (2020)		x					
Talamo and Sabatino (2018)	x		x				
Tate (2014)			x			x	
Tate et al. (2014)	x		x			x	x
Tate and Bals (2017)			x	x			
Theyel et al. (2018)			x				
Theyel and Hofmann (2020)	x					x	x
Uluskan et al. (2016)	x				x		
Uluskan et al. (2017)	x		x		x		
van Hassel et al. (2022)			x			x	
Wan et al. (2019a)				x	x		x
Wan et al. (2019b)			x		x		
Weldzius (2021)							x
White and Borchers (2016)	x						
Wiesmann et al. (2017)	x				x		x
Woldt and Godfrey (2022)							x
Wu and Zhang (2014)	x		x				x
Yang et al. (2021)	x		x				
Yu and Kim (2018)							x
Zhai (2014)			x		x		x
Zhai et al. (2016)	x						
Zhang (2021)					x		x