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Spatially dispersed corporate headquarters: A historical analysis of their prevalence, antecedents, and consequences☆

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ABSTRACT

Our study, which complements recent works challenging the traditional conceptualization of the CHQ as a single organizational unit, has a dual purpose. First, in descriptive terms, we set out to explore the prevalence of spatially dispersed CHQs in a historical context. Second, we aim to shed additional light on the CHQ's spatial design by exploring internal antecedents and potential consequences. Building on arguments from information-processing theory, we propose that the strategic complexity facing the CHQ (affecting its information-processing demands) is associated with the likelihood of a spatially dispersed CHQ (affecting its information-processing capacity). In line with our dual purpose, we conduct a historical study drawing on survey and archival data covering 156 public firms domiciled in four countries (Germany, the Netherlands, the UK, and the US) in the late 1990s. Our results provide empirical support for the hypothesized associations between strategic complexity and the CHQ's spatial design. Moreover, although we find no empirical support for the expected contingency effects, the results suggest that a spatially dispersed CHQ can have negative effects on CHQ and firm performance. Overall, our theoretical arguments and empirical results advance our knowledge about complex CHQ configurations.

1. Introduction

The functioning and design of the corporate headquarters (CHQ) is a key concern in management and international business (IB) research because the CHQ is a key feature of multi-business firms[1] (Chandler, 1962, 1991; Martinez & Jarillo, 1989; Menz, Kunisch, & Collis, 2015; Perlmutter, 1969). A wealth of studies provides important insights into the roles and designs of CHQs, which ultimately inform our knowledge about the theory of the firm in general (see Ambos & Mahnke, 2010; Ambos & Mueller-Stewens, 2017; Ciabuschi, Dellestrand, & Holm, 2012; Kunisch, Menz, & Ambos, 2015; Menz et al., 2015). Notably, this stream of literature largely rests on the assumption that the CHQ is a single organizational unit with all of its activities and staff in one location (Menz et al., 2015).

However, prima facie evidence, suggests that CHQ activities can be split among two or more locations. Indeed, a small number of studies offers initial evidence that some firms maintain "dual CHQs" (e.g., DuBrule, Bouquet, & Birkinshaw, 2010), or disaggregate and disperse CHQ activities across multiple locations (e.g., Baaij, Mom, Van den Bosch, & Volberda, 2015; Birkinshaw, Braunerhjelm, Holm, & Terjesen, 2006). A prominent example is Amazon, which released a "Request for Proposals" for its HQ2 in 2017 (see Amazon, 2017). Recently, scholars have thus advocated for contesting this traditional assumption. For example, in a special issue on complex HQ configurations, Nell, Kappen, and Laamanen (2017) stress the need to "explicitly break with the dominant view of the prior research on 'the headquarters' as a single, identifiable unit in one specific location" (p. 1121).

Yet, despite these initial efforts, our knowledge about CHQ dispersion is still limited in various ways: First, it is unclear whether CHQ dispersion is a phenomenon that has only recently emerged or one that

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[1] In line with Chandler (1962), we use "multi-business firm" as an umbrella term to capture firms that operate in multiple product and/or geographical markets, including multinational companies (MNCs).

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has prevailed for quite some time but has been neglected in HQ research. In other words, we do not know whether prior research on unitary CHQs accurately reported on the nature of those entities at those points in time or whether it provided an overly simplified view of a more complex phenomenon. By looking closely at historical data, we can resolve this uncertainty and potentially avoid the "reductive fallacy" of oversimplification that has hampered IB research in the past (Nohria & Ghoshal, 1994, p. 492). A number of prior studies in IB and management research have used this type of historical data to show how business practices are (or are not) changing, and as motivation for broader theoretical arguments (for extensive discussions, see Bucheli, Mahoney, & Vaaler, 2010; da Silva Lopes, Casson, & Jones, in press; Decker, Üsdiken, Engwall, & Rowlinson, 2018; Maclean, Harvey, & Clegg, 2016; O'Sullivan & Graham, 2010; Perchard, MacKenzie, Decker, & Favero, 2017; Rowlinson, Hassard, & Decker, 2014; Vaara & Lamberg, 2016).

Second, we know little about the internal factors that may be associated with a spatially dispersed CHQ and whether firms benefit from this spatial-design choice. Prior research has focused either on external factors or other HQ levels. For example, several studies on the relocation of certain CHQ activities have explored external factors, such as the perceived attractiveness of locations (Baaij et al., 2015) and the roles of external stakeholders (Birkinshaw et al., 2006). However, since the CHQ fulfills external and internal roles (e.g., Chandler, 1991; Foss, 1997), internal factors may also be associated with the CHQ's spatial design. In a related vein, the CHQ's spatial design can be expected to affect its functioning, especially how the CHQ creates value for the overall firm (Birkinshaw et al., 2006). We do not know whether firms benefit from this spatial-design choice.

Prior research suggests that information processing plays a key role with respect to the CHQ's design and its potential implications. For example, in empirical studies, Collis, Young and Goold (2007, 2012) revealed that the CHQ's organizational design, especially its size, is related to its information-processing demands. In a related vein, conceptual studies suggest that the CHQ's spatial design relates to information processing at the CHQ as well as in relation to its subsidiaries (Baaij & Slangen, 2013; Baaij, Van den Bosch, & Volberda, 2004). Yet, although an information-processing lens is useful for studying the CHQ's spatial design, it is not clear whether information-processing demands related to strategic complexity are associated with CHQ spatial dispersion and whether the benefits of CHQ spatial dispersion outweigh the costs (Nell et al., 2017).

Against this backdrop, the purpose of our study is twofold. First, in descriptive terms, we set out to explore the prevalence of spatially dispersed CHQs. While prominent examples and a few studies have recently documented the existence of spatially dispersed CHQs, we use a historical dataset to understand the occurrence of variations in the CHQ's spatial design beyond a present-day context. Second, in prescriptive terms, we develop and test a historically informed theory that brings together internal antecedents and potential consequences of operating a spatially dispersed CHQ. Specifically, we examine whether the *strategic complexity* facing the CHQ affects the decision to operate a spatially dispersed CHQ and we conduct the first empirical analysis of the potential *performance consequences* of this fundamental decision.

Drawing on information-processing theory (Egelhoff, 1982, 1991) and the underlying complexity arguments (Dobrajska, Billinger, & Karim, 2015; Schotter, Stallkamp, & Pinkham, 2017), we argue that the strategic complexity associated with a portfolio strategy of related diversification and a parenting approach that emphasizes influence on operating units' decisions increase the information-processing demands on the CHQ. This, in turn, increases the likelihood that the firm will rely on a spatially dispersed CHQ to provide the information-processing capacity needed to address those demands. Furthermore, in line with the premises of information-processing theory, we argue that operation of a spatially dispersed CHQ will be more beneficial under the two strategic-contingency conditions.

In line with the twofold purpose of our study, we conducted a historical study of the *occurrences*, *antecedents*, and potential *consequences* of CHQ dispersion. Our analysis of unique survey data and archival data for a sample of 156 public firms active in multiple industries and domiciled in Germany, the Netherlands, the UK, and the US in the late 1990s offers notable empirical support for the hypothesized associations between strategic complexity and the CHQ's spatial design. However, we find no support for the expected contingency effects. Instead, the empirical results reveal a direct negative association between a spatially dispersed CHQ and firm performance.

This study makes several theoretical contributions to management research, especially in the fields of IB and strategy. First, our study links the complexity arguments underlying the information-processing perspective to the CHQ's spatial design and, thus, supports information-processing theory in a domain that has received little attention. More specifically, our findings reveal the linkages between strategic complexity and spatial design, and suggest that the costs of having a spatially dispersed CHQ may outweigh the benefits. Second, our study advances the emerging stream of knowledge about complex HQ configurations. In particular, by turning the spotlight on the internal factors associated with CHQ dispersion, our study complements prior research that has focused on other HQ levels and external factors. Third, our study contributes to research about CHQ-subsidiary relations. While most of the extant research has conceptualized CHQ-subsidiary relations as 1-n relations, our study suggests that they often resemble n-n relations. Therefore, future CHQ-subsidiary research may benefit from shifting the level of analysis from the CHQ as a whole to CHQ parts.

Our study also contributes to the extant literature by showing that although CHQ dispersion is highly relevant in a modern business context, its origins can be traced back to at least the end of the previous century. Just as HQ-subsidiary research had long been hampered by the "reductive fallacy" of neglecting differences across a firm's subsidiaries (Nohria & Ghoshal, 1994), the HQ literature fails to account for differences among CHQ spatial configurations. As a result, some of the extant knowledge may need to be revisited.

2. Background

The emergence and diffusion of multi-business firms is probably the most noteworthy organizational phenomenon in modern business history (Chandler, 1962, 1992; Fligstein, 1985; Perlmutter, 1969).[2] These firms, which operate across multiple geographical, product, and customer markets, have emerged as the dominant organizational form for the conduct of business in many economies (McKinsey Global Institute, 2013). The separation of activities performed by the CHQ from those performed by product divisions and/or international subsidiaries is a key characteristic of these firms (Andersson & Holm, 2010; Chandler, 1962, 1991; Ciabuschi, Dellestrand, & Nilsson, 2015; Menz et al., 2015). Whereas the product and geographical operating units are responsible for creating competitive advantages within their particular markets (Porter, 1980, 1985), the CHQ is responsible for creating a whole that is greater than the sum of its parts, thereby justifying the existence of the multi-business firm (Campbell, Goold, & Alexander, 1995; Contractor, 2012; Foss, 1997; Porter, 1987).

In formal terms, the CHQ can be defined as the multi-business firm's central *organizational entity*, "which is (structurally) separate from the product and geographic operating units, and hosts corporate executives as well as central staff functions that fulfill various internal and external roles for the overall firm" (Menz et al., 2015, p. 642). As discussed in the strategy and IB literature (e.g., Birkinshaw et al., 2006; Laamanen, Simula, & Torstila, 2012), the CHQ is conceptually different from

[2] For example, Nobel laureate Oliver Williamson noted that "the most significant organizational innovation of the twentieth century was the development in the 1920s of the multidivisional structure" (1985, p. 279).

Table 1
Selected studies on HQ dispersion (non-exhaustive).

Study	HQ level [a]	Focus	Theory	Method	Key Insights
Goold and Campbell (2002)	CHQ and DHQ/RHQ	processes and design	parenting	conceptual; illustrative/ descriptive cases	Complex structures, which are characterized by blurring lines between "businesses" and "parents," face special parenting challenges.
Birkinshaw et al. (2006)	CHQ and DHQ/RHQ	antecedents to cross-border relocations	multiple theoretical lenses	quantitative: 40 large Swedish firms; 125 DHQs and 35 CHQs	There are different drivers for CHQ relocation (i.e., external stakeholders) and BU HQ relocation (i.e., BU activities and product markets).
Desai (2009)	not specified	processes and design	n.a.	conceptual; illustrative/ descriptive cases	Firms unbundle HQ functions and reallocate them across nations. Legal, financial and homes for managerial talent do not have to be co-located.
Alfoldi, Clegg, and McGaughey (2012)	RMM	antecedents/ processes/ consequences	contingency; information processing; agency theory	single case study; Unilever Hungary's RMM	RMMs offer benefits: (1) balance integration and responsiveness at levels below RHQ; (2) exploit local expertise on regional level; (3) free HQ from monitoring remote agents.
Baaij and Slangen (2013)	CHQ	design; consequences	communication costs	conceptual	Due to CHQ disaggregation, there are multiple CHQ–subsidiary geographic distances, which co-determine decisions about subsidiaries.
Baaij et al. (2015)	CHQ	antecedents to cross-border relocations	multiple theoretical lenses	58 of the 100 largest Dutch MNCs	Different CHQ core parts have different relocation drivers.
Birkinshaw, Crilly, Bouquet, and Lee (2016)	not specified	processes of "dual HQ" creation	strategic dualities; attention	Single case study; mixed-method longitudinal study, 2007–2010	A sequence of changes (labelled as counterweight, hybrid engine, and flywheel) led to a "dual HQ" to resolve the global integration/local responsiveness duality.
Alfoldi, McGaughey, and Clegg (2017)	RMM	processes of RMM	cognition; sensemaking and sensegiving	single case study; Unilever Hungary's RMM	Cycles of sensemaking and sensegiving about RMM meaning, lead to co-construction by multiple units, with changes in RMM scope and governance over time.
Belderbos, Du, and Goerzen (2017)	RHQ	antecedents to location choice	spatial transactions costs	1031 RHQ location choices in 48 cities	City connectivity, geographic distance, and RHQ roles influence the likelihood of particular cities as RHQ location.
Birkinshaw, Ambos, and Bouquet (2017)	CHQ	processes of CHQ dispersion	network perspective: boundary spanning	Single case study; five-year longitudinal study 2007-2012	As a firm shifts from a traditional CHQ in one location, to a dual CHQ in two locations, to a virtual CHQ with activities split across multiple locations, CHQ executives engage in various boundary spanning activities, which add value to the MNC and improve the effectiveness of the internal and external network.
Kahari, Saittakari, Piekkari, and Barner-Rasmussen (2017)	RHQ	antecedents to RHQ mandate losses	absorptive capacity	374 RHQ between 1998 and 2010	Deficient RHQ-specific capabilities and realized absorptive capacity drive full mandate loss; lack of RHQ-location-specific capabilities drive partial mandate loss.
Nell et al. (2017)	not specified	n.a.	multiple	conceptual	A conceptualization of HQ activities as a dynamic system in which activities can be distributed organizationally and spatially.
Schotter et al. (2017)	RHQ and RMM	antecedents to RHQ and RMM	complexity; information-processing theory	event history; Japanese MNE foreign investments 1992–2014	The number and dispersion of MNEs' subsidiaries in a focal region affect the likelihood and form of region-bound HQ disaggregation.
Slangen, Baaij, and Valboni (2017)	Legal seat	consequences of inversions (relocations)	business economics; institutional theory	event study of 117 inversions announced 1990–2016	Positive investor reactions to inversions by firms with higher US tax costs in repatriating income.

[a] CHQ … corporate headquarters; RHQ … Regional headquarters; RMM … regional management mandates.

regional headquarters (RHQ) or divisional headquarters (DHQ), which serve as central organizational entities for regional or product divisions, respectively (e.g., Ciabuschi et al., 2012).[3]

Scholars have studied various characteristics of the CHQ, including its roles, design, and location (Menz et al., 2015). An implicit assumption in much of the extant research is that the CHQ is a single organizational unit at one location. Indeed, when Chandler (1962) first described the CHQ as a "general office," he was referring to large US companies, such as DuPont, General Motors, Standard Oil (New Jersey), and Sears, Roebuck and Company, that all had a specific organizational structure: the multidivisional form (M-form). Moreover, he focused on a specific period—the first half of the twentieth century. For those firms at that time, a non-dispersed CHQ was standard. This thinking was still evident in the title of Chandler's 1991 article—"The Functions of the HQ Unit in the Multibusiness Firm"—in which he specifically referred to the CHQ as the central "unit."

The empirical reality, however, has changed over time. While the case of Amazon HQ2 mentioned in the introduction is a recent prominent example, a few studies have indeed provided prima facie evidence for the occurrences of spatially dispersed CHQs. For example, in a study of Swedish firms in the late 1990s, Birkinshaw et al. (2006) found that 6 of the 35 studied CHQs (17%) had CHQ management functions abroad. In a study of large firms in the Netherlands in the 2000s, Baaij et al. (2015) revealed that 25 out of 58 (43%) had one or more CHQ functions abroad. These observations suggest that the phenomenon of dispersed CHQs may not only be a contemporary phenomenon.

Probably the first systematic effort to challenge the traditional conceptualization of the CHQ as a single organizational unit was a special issue of *Journal of Management Studies* aimed at exploring complex HQ configurations (see Nell et al., 2017). However, as shown in Table 1, these studies have largely focused on RHQs, regional management mandates (RMMs; i.e., levels below the CHQ), and external factors that may influence HQ dispersion. In an attempt to complements

[3] A spatially dispersed CHQ is conceptually different from the presence of DHQs/RHQs. While DHQs/RHQs can be viewed as a way to decentralize CHQ activities with the same activities carried out by two or more DHQs/RHQs, a spatially dispersed CHQ is characterized by CHQ activities that are not co-located in one location but located in different locations. Therefore, it is possible for firms to simultaneously operate a spatially dispersed CHQ at the overall firm level and to have DHQs/RHQs in place.

these works, our study focuses on the CHQ and internal factors that may be associated with its spatial dispersion.

3. Theory and hypotheses

To study internal strategic factors related to the decision to spatially disperse the CHQ, we draw on information-processing theory (Egelhoff, 1982, 1991; Galbraith, 1973; Tushman & Nadler, 1978). According to this perspective, a critical activity in organizations is the processing of information, which includes "the gathering of data, the transformation of data into information, and the communication and storage of information in the organization (Galbraith, 1973; Tushman & Nadler, 1978)" (Egelhoff, 1991, p. 343). The amount of information that needs to be processed is determined by the uncertainty and complexity that organizations face (Galbraith, 1973). Consequently, organizations attempt to align their information-processing capacities with their context's complexity and uncertainty (Egelhoff, 1991, p. 343).

Organizations need solutions that ensure an adequate information-processing capacity given the degree of complexity that corporate management faces (Egelhoff, 1982, 1991; Galbraith, 1973). Scholars have analyzed the appropriateness of specific organizational forms, such as the M-form (Chandler, 1962), as well as how the CHQ's information-processing demands affect the CHQ's design, especially its size (Collis et al., 2007). While this research demonstrates that the firm's organizational design in general and the CHQ's organizational design in particular are related to information processing, few studies have focused the CHQ's spatial dimension in this regard (Baaij & Slangen, 2013; Baaij et al., 2015).

Information-processing theory is a particularly useful lens for studying spatially dispersed CHQ as a specific form of complex HQ (see Nell et al., 2017). The spatial dispersion of the CHQ can be expected to have a profound effect on the firm's information-processing capacity. For example, spatial dispersion may allow for specialization in different tasks in different locations, and it may affect the CHQ's proximity to subsidiaries (Baaij & Slangen, 2013) and external stakeholders, such as suppliers, customers, and shareholders (Birkinshaw et al., 2006). In this study, we focus on the internal antecedents and potential consequences of operating a spatially dispersed CHQ. Specifically, we examine whether the *strategic complexity* facing the CHQ affects the decision to operate a spatially dispersed CHQ and test the potential *performance consequences* of this fundamental decision.

3.1. Antecedents of a spatially dispersed CHQ

The corporate strategy and IB literature both describe the CHQ's challenge as "achieving a balance between the differentiation and integration of the firm's operating units that is appropriate to the firm's context (Lawrence & Lorsch, 1967)" (Menz et al., 2015, p. 640). Porter (1987) argued that "corporate strategy concerns two different questions: what businesses the corporation should be in and how the corporate office should manage the array of business units" (p. 43). In other words, the management challenge centers on a dedicated corporate portfolio strategy and the coordination of the businesses through a suitable parenting style. These two factors have previously been considered when studying firms' organization structures (Hill & Hoskisson, 1987; Hoskisson, 1987; Hoskisson & Hitt, 1988), especially their CHQ designs (Collis et al., 2007, 2012).

On this basis, we argue that a firm's portfolio strategy and parenting approach—the two key factors concerning firm-level strategic complexity—can be expected to affect the CHQ's spatial dispersion. First, the firm's portfolio strategy can be associated with different information-processing requirements facing the CHQ. According to prior research, the firm's product portfolio influences the task demands associated with managing the overall firm (Campbell, Whitehead, Alexander, & Goold, 2014; Hill & Hoskisson, 1987; Menz et al., 2015; Porter, 1987). As such, we expect that the firm's portfolio strategy can be associated with the CHQ's spatial design.

Firms that are active in several product markets have a higher degree of complexity than other firms, especially single-business firms. In fact, diversification increases the complexity of corporate-level management tasks, such as strategizing (Geringer, Tallman, & Olsen, 2000; Menz & Scheef, 2014), which makes it more difficult to process information at a single location and may give rise to a need for expertise that is not available at one location. Firms with a variety of businesses may conclude that processing and aggregating information requires proximity to the (diverse) operating units and, therefore, decide to split the CHQ into multiple locations. Moreover, the scope of the business portfolio is indicative of the dedicated capabilities available to the CHQ. For example, the CHQ of a large bank may choose to make use of the strong information-processing capabilities in its retail banking division by operating an additional CHQ location.

More specifically, firms that diversify into related businesses face increasing complexity and information-processing demands at the corporate level (Geringer et al., 2000; Henderson & Fredrickson, 1996). For example, strategies of related diversification typically involve the exploitation of synergies across the business portfolio (Hill, Hitt, & Hoskisson, 1992; Hill & Hoskisson, 1987; Hoskisson, 1987), which requires a corresponding information-processing capacity and functional expertise at the CHQ (Egelhoff, 1982, 1991). Given these needs, firms involved in related diversification are likely to search for ways to source and develop these capabilities. Conversely, strategies of unrelated diversification typically reduce the task demands at the CHQ because firms adopting these strategies tend to provide their businesses with higher levels of discretion (e.g., Collis & Montgomery, 1998; Porter, 1987). Hence, as the CHQ in a firm undertaking related diversification must handle diverse activities, tasks are more likely to be dispersed across several locations. In sum:

H1. The extent to which a firm pursues a portfolio strategy of related diversification is positively associated with the likelihood that it operates a spatially dispersed CHQ.

Second, the firm's parenting approach can be associated with varying information-processing demands facing the CHQ. The importance of spatial proximity to the operating units can be expected to vary depending on the firm's parenting style in terms of, for example, "strategic planning" versus "financial control" (Goold & Campbell, 1987). Along the same lines, Baaij et al. (2004) argue "that these parenting styles can be associated with [CHQ] location requirements," which may have an impact on CHQ relocations (p. 144).

CHQs with a more hands-on approach need a better understanding of the operating units (Poppo, 2003) and their local contexts (Nell & Ambos, 2013) and, therefore, closer proximity to those operating units (Baaij et al., 2004). Hence, the more a CHQ attempts to influence the decisions made by the various product or geographical divisions, such as human resources, R&D, and marketing, the more important its proximity to the operating units becomes and, thus, the more likely its activities will be dispersed. Relatedly, the more a CHQ adopts an interventionist parenting approach and becomes involved in functional activities, the more it needs to be closer to the external stakeholders and may, thus, benefit from several CHQ locations. For example, a firm with a centralized R&D function may decide to locate this function close to external research institutions, such as universities.

A firm's parenting approach is particularly evident in the extent of the CHQ's functional influence on decisions made by operating units (Campbell et al., 1995; Goold & Campbell, 2002; Porter, 1987). Therefore, this aspect may be associated with decisions regarding the spatial dispersion of the CHQ. The CHQ's functional influence is related to the degree of (functional) specialization at the CHQ and the demand for related expertise, which may not be available at a single CHQ location but may require the operation of a more complex, spatially dispersed CHQ structure. These subunits, which are often referred to as "corporate functions" (e.g., Kunisch, Müller-Stewens, & Campbell, 2014; Menz & Barnbeck, 2017), handle various activities in functional

areas, such as IT, human resources, marketing, innovation, and strategy. One method of obtaining the required expertise and effectively processing the necessary information is to spatially separate these functions from other CHQ activities. For example, the main CHQ location of the German carmaker BMW is in Munich, but it maintains a central design function in California. In sum:

H2. The extent to which a firm exercises an influence on its operating units' decisions is positively associated with the likelihood that it operates a spatially dispersed CHQ.

3.2. Consequences of a spatially dispersed CHQ

A decision to spatially disperse the CHQ is likely to have consequences for the CHQ's operations and, thereby, the overall firm. However, prior research offers few insights into whether and why complex CHQ structures, such as spatially dispersed CHQs, affect the CHQ's functioning. In fact, no empirical studies on the performance effects of such CHQ configurations are available. Nevertheless, in the following, we gather arguments for the potential positive and negative consequences of a spatially dispersed CHQ.

On the one hand, spatial dispersion may enhance the CHQ's effectiveness and improve firm performance by, for example, allowing the firm to build on specialized resources and capabilities, such as managerial talent and services, from various locations to deal with the firm's task demands (Baaij et al., 2015). In other words, spatial dispersion may enable the CHQ to capitalize on various location-specific advantages (Baaij & Slangen, 2013). In particular, spatial dispersion may enhance the CHQ's processing of information from both internal and external stakeholders, and improve relationships with those stakeholders (Baaij et al., 2015). That increased adaptability should result in better CHQ performance and overall firm performance. For example, the CHQ's investments in relationships with the operating units' external contexts have been found to increase the value added by the CHQ (e.g., Nell & Ambos, 2013).

On the other hand, the operation of a spatially dispersed CHQ may involve direct and indirect costs that could offset or even exceed its benefits. CHQ dispersion may complicate communication and information processing among CHQ units and teams at different locations, which may increase transaction costs and negatively affect the quality and speed of various management tasks. For example, the presence of several CHQ locations may increase communication costs because of the distances between the various CHQ activities and the firm's operating units (Baaij & Slangen, 2013).

Notwithstanding these arguments for potential direct effects, our chosen theoretical lens suggests a contingency effect. Our first two hypotheses explored certain strategic circumstances that might be associated with the incidence of spatially dispersed CHQs. However, as we shall see, these associations do not hold for all observations in our sample. Therefore, we can explore whether adherence to the key premises of the information-processing perspective yields the expected benefits (i.e., contingency effects). According to information-processing theory, alignment between the organization's information-processing capacities, represented in our study by the CHQ's spatial dispersion, and its information-processing requirements, represented in our study by the firm's portfolio strategy and parenting approach, should benefit performance (Egelhoff, 1991). Therefore, we argue that to the extent that firms face strategic complexity as captured in Hypotheses 1 and 2, the decision to operate a spatially dispersed CHQ should yield performance benefits. In turn, firms that do not face such strategic complexities but operate a spatially dispersed CHQ incur the negative effects elaborated above. In sum:

H3. To the extent that a firm faces strategic complexities stemming from its portfolio strategy and parenting approach, as posited in Hypotheses 1 and 2, it will benefit from a spatially dispersed CHQ in terms of: (a) CHQ performance and (b) firm performance.

4. Method

In line with the twofold purpose of our study, we conducted a historical analysis. In recent debates on historical approaches in various management disciplines, including IB and strategy research (Bucheli et al., 2010; da Silva Lopes et al., in press; Decker et al., 2018; Maclean et al., 2016; O'Sullivan & Graham, 2010; Perchard et al., 2017; Rowlinson et al., 2014; Vaara & Lamberg, 2016), scholars have advocated for "historical studies." For example, Argyres et al. (2017, pp. 1–2) argue: "Historical research methods and historical data are used to study a diverse set of strategic issues including industry evolution, technology strategy, dynamic capabilities and diffusion of innovation. […] Such analysis can be highly useful in strategy research that seeks to analyze […] the origins/evolution of contemporary phenomena, identify sources of exogenous variation, develop and test historically informed theory, and add more detail to existing theories." Notably, Chandler's seminal work "Strategy and Structure" and some related works (see Chandler, 1962, 1991, 1992) that have significantly contributed to our understanding of CHQ are historical studies.

Specifically, our study uses historical data. As we shall see, a decent proportion of the firms in our sample, especially firms from the US and the UK, had dispersed their activities across different locations. The historical data thus ensure sufficient variance in our main explanatory variable: the CHQ's spatial dispersion. As we discuss later, the findings from our historical study challenge several decades of CHQ research that largely rested on the prevailing assumption that a CHQ is a single unit at one location (Menz et al., 2015).

4.1. Sample and data

In general, gaining a comprehensive understanding of the CHQ's role and functions is a challenging endeavor owing to the strategic importance and highly political nature of the CHQ (e.g., Ferlie & Pettigrew, 1996; Porter, 1987). As information on the CHQ and its spatial design is not fully disclosed in publicly available sources, we rely on survey data for this study. Given the lack of knowledge on this topic, we examine a sample that spans firms from multiple countries and industries and is, thus, as comprehensive as possible.

To the best of our knowledge, the most comprehensive CHQ datasets to date have been collected by an international research consortium led by the Ashridge Strategic Management Centre (Young et al., 2000). Although these datasets have been used in several academic studies (Buehner, 2000; Collis et al., 2007, 2012), they also contain data on the CHQ's spatial design that has not previously been analyzed. As it would have been difficult to collect similarly rich data about CHQs across different contexts, we negotiated access to the data for firms domiciled in two distinct institutional contexts: the Anglo-Saxon liberal market economies and the continental European coordinated market economies (Albert, 1993; Doh, Lawton, & Rajwani, 2012; Egelhoff, 1984; Hall & Soskice, 2001).

Overall, this survey data covers 292 companies in four countries—Germany (DE), the Netherlands (NL), the United Kingdom (UK), and the United States (US)—and spans various ownerships types (including government owned, private firms, and public firms) and multiple industries. As described in Collis et al. (2007), the data were collected between 1997 and 1999. The survey instrument, which was based on a prior Ashridge survey (Young & Goold, 1993) and a pilot survey, was sent to the CEOs of the largest firms in each of the target countries. The response rates were 12% for the US, 15% for Germany, 20% for the UK, and 33% for the Netherlands. The response rates were higher for larger firms, which is favorable given that the CHQ typically matters less for smaller firms, as they often only operate a single business (Collis et al., 2007).

In line with the purposes of our study, we complemented this survey data with firm-level information from archival sources, including the Thomson One Banker database, annual reports, and firm

websites, which required that we focus on the 162 listed firms. We collected this data in 2016. Due to missing data, we ended up with a final sample of 156 *publicly traded firms* for our analyses. About 40.7% of these firms were domiciled in the US, 35.8% in the UK, 10.5% in Germany, and 13.0% in the Netherlands. The firms employed an average of 41,302 people, with the number of employees ranging from 1030 to 306,000.

4.2. Variables and measurements

As noted above, we used survey data and secondary data to measure our variables, which reduces potential problems of common method bias. With respect to our measures, we relied on existing scales whenever possible (for an overview of the operationalization of the study's measures, please refer to Table A1 in the appendix section).

4.2.1. Dependent variables

We measured the study's central construct—the *spatially dispersed CHQ*—using a binary variable that captured whether all CHQ staff were housed in one location or in more than one location. We developed this measured based on a survey item that asked participants the following question: "How many locations house corporate headquarters staff? Include separate corporate R&D and service locations" (Young et al., 2000). Respondents were asked to assign the extent of their firm's CHQ dispersion to one of the following four categories: 1 = one location, 2 = two locations, 3 = three to five locations, and 4 = more than five locations. As we were particularly interested in the *spatially dispersed CHQ* as distinct from the *non-spatially dispersed CHQ*, we calculated a binary variable by assigning a value of 1 for the "spatially dispersed CHQ" to categories two through four, and a value of 0 otherwise. An inspection of the variable provided additional support for this choice, as the nature of the variable was rather bi-polar (or at least categorical rather than linear, especially as few CHQs were placed in the fourth category).[4]

To analyze the performance implications of a spatially dispersed CHQ, we followed Collis et al. (2007) in that we used two types of performance measures. First, we relied on Young et al.'s (2000) item to measure *CHQ performance*. This item asked respondents to use a three-point scale to rate the CHQ's cost effectiveness. Even though this measure is self-reported, it allows us to directly analyze CHQ performance (Collis et al., 2007).

Second, we investigated performance implications at the firm level. Scholars largely agree that the CHQ's focus is on the firm's long-term performance (Menz et al., 2015). For example, Chandler (1992, p. 389) states: "The major role of the new corporate headquarters became, and remained, that of maintaining the long-term health (usually defined as continued profitability) and growth of their firms." Thus, while accounting-based measures of firm performance typically retrospectively examine short-term performance consequences, Tobin's *q*—a market-based performance measure—is favorable because it captures the firm's current profitability and indicates stockholders' expectations of the firm's future development. Moreover, it is not affected by accounting standards, which vary across countries and industries, and is generally less subject to managerial manipulation (e.g., Lang & Stulz, 1994; Wernerfelt & Montgomery, 1988). Tobin's *q* is calculated as the ratio of the sum of the firm's market value and the book value of its debt to its total assets (Chung & Pruitt, 1994). The data for this measure were obtained from Thomson One Banker. We calculated the three-year average of the firm's Tobin's *q* starting at the end of the financial year following the survey (t + 1 to t + 3).[5] By lagging this performance variable, we are able to mitigate concerns about reverse causality in the respective analysis.

4.2.2. Independent variables

The independent variables used in our study were established in previous CHQ research (Collis et al., 2007, 2012). First, to analyze the role of the firm's portfolio strategy with respect to decisions regarding whether to introduce a spatially dispersed CHQ, we applied a three-year average (from t-3 to t-1) of Palepu's (1985) entropy measure of diversification, which distinguishes among the related, unrelated, and total *diversification* of a firm's business portfolio.[6] We mitigate concerns about reverse causality in the respective analysis by lagging this independent variable.

Second, to examine the influence of the firm's parenting approach, we considered the extent of the *CHQ's functional influence* on operating units' decisions using the survey measure developed by Collis et al. (2007). This measure assesses the strength of the CHQ's influence on major operating decisions in five functional areas: human resources, R&D, marketing, purchasing/logistics, and information technology.[7]

4.2.3. Control variables

To account for potential confounding effects and alternative explanations, we considered several control variables. First, to analyze whether a spatially dispersed CHQ is a response to institutional conditions, we used an *Anglo-Saxon dummy* that distinguished the firms in our study's sample that were legally domiciled in a liberal market economy (a value of 1 for UK and US firms, and a value of 0 for German and Dutch firms) (Albert, 1993, as cited in Collis et al., 2007).[8]

Second, we used *industry-sector dummies* to capture potential industry differences. As many firms in our sample were diversified across several four-digit SIC codes, the industry sectors were based on self-reported affiliations with one of twelve broad business sectors (Young et al., 2000). In particular, we controlled for the effects of the manufacturing and consumer-services sectors, which are the two largest sectors of the twelve in our sample.[9]

Third, we controlled for the firm's overall organizational structure. The firm's organizational structure may reflect the presence of alternative ways of coping with complexity (e.g., Egelhoff, 1982, 1991), including the existence of divisional and/or regional headquarters (Young et al., 2000). We used two dummy variables to capture whether each firm had a *multidivisional structure* (assigned a value of 1; 0 otherwise) and whether each firm had a *matrix structure* (assigned a value of 1; 0 otherwise), based on data from Young et al. (2000).

Fourth, we accounted for the firm's *geographical scope*, which is conceptualized as the extent to which a company operates internationally. Survey participants were asked to indicate whether the firm operated: (1) primarily in one country, (2) primarily in a number of countries on one continent, (3) primarily on two continents, or (4) on three or more continents (Young et al., 2000).

[4] In a robustness test, we ran the analyses while treating the four categories that reflect the extent of CHQ's spatial dispersion as a continuous variable and performed OLS regression analyses. The results were highly consistent with the results of our initial analyses (please refer to Table A2 in the appendix section).

[5] We also ran the analyses using Tobin's *q* for one year in t + 1, which led to similar results.

[6] We also ran the analyses using Palepu's (1985) entropy measure of diversification for one year in t-1, which led to similar results.

[7] In a robustness test, we considered the number of discretionary CHQ functions at the respective firm's CHQ using Collis et al.'s (2007) classification of CHQ functions as an alternative measure of the parenting approach. The results were similar.

[8] To account for potential CHQ differences across firms domiciled in the two institutional contexts in our sample, we used country dummies as a control in the analysis of the performance effects.

[9] In a robustness test, we ran our analyses with eleven industry dummies. In another robustness test, we created industry dummies based on the firms' primary SIC codes. The results of these analyses were similar, suggesting that our results are robust regardless of potential industry effects.

Table 2
Descriptive statistics and correlations.

	Variable	Obs.	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)	Dual CHQ (=2 locations)[a]	156	0.22	0.41	0.00	1.00	1.00										
(2)	Dispersed CHQ (> 2 loc.)[a]	156	0.28	0.45	0.00	1.00	−0.33***	1.00									
(3)	Multidiv. structure dummy	156	0.40	0.49	0.00	1.00	−0.05	0.04	1.00								
(4)	Matrix structure dummy	156	0.07	0.26	0.00	1.00	−0.15†	−0.01	−0.22**	1.00							
(5)	Geographic scope	156	2.88	1.28	1.00	4.00	0.10	0.03	0.20*	−0.03	1.00						
(6)	Firm legacy (prior merger)	156	0.03	0.18	0.00	1.00	−0.01	0.05	0.08	0.05	0.05	1.00					
(7)	Firm size (ln # empl.)	156	9.88	1.26	6.94	12.63	−0.00	0.27***	0.24**	0.04	0.16*	0.11	1.00				
(8)	Liberal market economy	156	0.76	0.43	0.00	1.00	0.05	0.26**	−0.21**	0.04	−0.12	−0.07	−0.06	1.00			
(9)	CHQ functional influence	146	11.43	3.99	5.00	20.00	−0.00	0.10	−0.28***	0.13	−0.25**	−0.08	−0.12	0.15†	1.00		
(10)	Related diversification	132	0.33	0.33	0.00	1.34	−0.08	0.20*	0.09	0.12	0.14	0.04	0.22*	−0.30***	−0.02	1.00	
(11)	CHQ cost effectiveness	150	2.35	0.63	1.00	3.00	−0.13	−0.15†	−0.03	−0.05	−0.01	0.01	−0.18*	−0.06	−0.05	−0.10	1.00
(12)	Tobin's *q*	127	−0.06	0.74	−2.45	1.90	0.19*	−0.02	−0.06	−0.08	0.14	−0.26**	0.00	0.23**	0.14	−0.06	0.11

N = 156; †p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001.
[a] Please note, the two categories are mutually exclusive. The correlation stems from 0 values.

Fifth, we considered the firm's idiosyncratic legacy as an alternative explanation for a dispersed CHQ. Companies that are formed through a merger may retain the merging firms' CHQ locations, at least for some time, owing to the costs involved, the risk of losing talent, or the fact that post-merger integration takes time. The German diversified industrial group ThyssenKrupp is one such case: it was formed in 1999 but maintained two CHQ locations until 2010 when the CHQs were finally merged into a single CHQ in a new building (ThyssenKrupp, 2015). Therefore, we obtained information from annual reports and websites on whether each firm included in the sample was formed through a merger in the years prior to the study's survey. Firms that were the result of a merger were coded 1 for *acquisition dummy* (0 otherwise).

Sixth, we used the number of employees to control for *firm size*. Firm size is among the most common determinants of organizational complexity and task demands (e.g., Henderson & Fredrickson, 1996; Williamson, 1975). As such, firm size may influence decisions regarding spatially dispersed CHQs. As the distribution of the respective values was extremely skewed, we log-transformed the variable.

4.3. Analytical procedures

To test our hypotheses, we used the manual two-stage Heckman selection method to correct for potential self-selection-based endogeneity (Bascle, 2008; Clougherty, Duso, & Muck, 2016; Hamilton & Nickerson, 2003; Shaver, 1998). We applied two types of regression analyses in accordance with their respective assumptions (e.g., Sanders & Carpenter, 1998). First, given the binary nature of the "spatially dispersed CHQ" variable, we used binominal logistic regression. In the first stage, we estimated a logit model to predict the likelihood of "dispersed CHQ." We then calculated the inverse Mills ratio (Shaver, 1998) and included it the second-stage models, which estimated the performance consequences of the spatially dispersed CHQ. Second, we used OLS regression to analyze the hypothesized performance consequences of spatial CHQ dispersion (Aiken & West, 1991; Baron & Kenny, 1986). In line with Hair, Black, Babin, Anderson, and Tatham (2005), we tested the regression assumptions related to both the individual variables and the relationship as a whole.

We also performed this second step independently. As the results of the analyses using the Heckman correction were consistent with those without the Heckman correction, we are confident that the performance effects are robust and unbiased.

5. Results

Table 2 shows the descriptive statistics and correlations for all variables used in our analyses of the antecedents and consequences of the CHQ's spatial dispersion (with the exception of the industry and country dummies). The correlations between the variables do not exceed 0.3, which indicates that multicollinearity is not an issue in our analysis. This is verified by the variance inflation factors for the analyses, which are all less than 2.

Notably, the descriptive statistics also indicate the occurrence of a spatially dispersed CHQ. About 50% of the companies in our final sample reported a dispersed CHQ. Of those companies, approximately half had a dual CHQ (22% of all companies) and half had a CHQ dispersed across more than two locations (28%). Notably, the occurrence of a spatially dispersed CHQ varied considerably across the four countries covered by our study's sample: 59% of the firms in the US had spatially dispersed CHQs, while the figure was 57% for the UK, 38% for the Netherlands, and 12% for Germany.

The descriptive data provides several key insights because it reveals that CHQ dispersion is not a recent phenomenon. While the academic literature has only picked up on the spatial dispersion of HQ operations in the last decade (see Table 1), forces pushing firms to split their CHQs across multiple locations have evidently been in existence for much longer.

5.1. Antecedents

We considered whether the firm's portfolio strategy and parenting approach may be associated with the spatial dispersion of the CHQ. Although the coefficients in logistic regression models cannot be interpreted directly, the positive (negative) signs of the coefficients are straightforward, as they indicate an increase (decrease) in the likelihood that a firm operates a spatially dispersed CHQ compared to the base category ("integrated CHQ", i.e. "non-dispersed CHQ"). Table 3 presents the binomial logit estimates for the four models, which are all significant. Model 1 is the control model, while Models 2 and 3 show the results for Hypotheses 1 and 2, respectively. Model 4 is the full model including all variables.

As our study focuses on a nascent area of CHQ research, the empirical results for the control variables are noteworthy. We included several institutional, industry, and organizational structure dummies, some of which were significant. Firms domiciled in Anglo-Saxon

countries are more likely to operate a spatially dispersed CHQ than firms domiciled in other countries ($p < 0.001$). Moreover, as shown in Model 1, firm size ($p < 0.001$) is positively related to the likelihood of a dispersed CHQ. This effect is consistent throughout the models. The firm's legacy (i.e., whether it was formed through a merger prior to the survey) plays a minor role, while the firm's geographical scope is not a significant predictor.

Our first hypothesis (H1) states that the extent to which a firm pursues a portfolio strategy of related diversification is positively related to the likelihood that the firm operates a spatially dispersed CHQ. As Models 2 and 4 reveal, the results provide consistent empirical support for H1 ($b = 1.93/2.06$; $p < 0.05$). The second hypothesis (H2) posits that the extent to which a firm exercises influence on its operating units' decisions is positively associated with the likelihood that the firm operates a spatially dispersed CHQ. As shown in Models 3 and 4, we also find consistent empirical support for H2 ($b = 0.11/0.14$; $p < 0.05$).

While our theoretical arguments focus on the relationship between these factors and the likelihood that a firm operates a spatially dispersed CHQ (i.e., CHQ staff at two or more locations), we also report the results for the likelihood that a firm has a dual CHQ. Although we already took precautions to control for potential specialties related to "dual CHQ" (i.e., firm legacy), we also explored whether our predictions held if we isolated those cases. To do so, we created a categorical variable by collapsing the third and fourth categories. We then used the following categories for our analysis: 1 = one location ("non-dispersed CHQ"), 2 = two locations ("dual CHQ"), and 3 = three or more locations ("dispersed CHQ").

Given the categorical nature of the dependent variable in these models, we applied multinomial logit regression analyses to examine the hypothesized antecedents of CHQ dispersion (Hoetker, 2007; Menard, 1995; Wiersema & Bowen, 2009). Although our hypotheses predict the likelihood of a "dispersed CHQ" in general, we used this method to simultaneously estimate the likelihood of a "dual CHQ" or a "dispersed CHQ" relative to the base category "non-dispersed CHQ" (e.g., Ocasio & Kim, 1999; Parrino, 1997; Zhang & Rajagopalan, 2003). Given our study's purpose, this procedure is advantageous because it allows us to match arguments from the theoretical perspective, which are primarily associated with the "dispersed CHQ" category, with the respective empirical category. It also enables us to compare the "dispersed CHQ" category with the less related "dual CHQ" category for which other idiosyncratic explanations might exist.

Table 4 presents the multinomial logit estimates for the four models, which are all significant. Model 1 is the control model. Models 2 and 3 show the results for Hypotheses 1 and 2, respectively, and Model 4 is the full model including all variables. Although the coefficients in multinomial logit regression models cannot be interpreted directly, the positive (negative) signs of the coefficients are straightforward, as they indicate an increase (decrease) in the likelihood that a firm operates a "dual CHQ" or a "dispersed CHQ" compared to the base category ("non-dispersed CHQ").

Notably, the signs for all relevant variables are similar for the likelihood that a firm has a "dual CHQ" or a "dispersed CHQ." While the portfolio strategy and parenting approach are not significantly associated with the likelihood that a firm has a "dual CHQ," they are significantly associated with the likelihood that a firm has a "dispersed CHQ." In sum, these models show that the previously reported findings for the categorical measure hold, thereby corroborating the empirical support for the hypotheses.

5.2. Consequences

In accordance with the premises of information-processing theory, Hypothesis 3 (H3) proposes that firms benefit from operating a spatially dispersed CHQ under the conditions of strategic complexity outlined in Hypotheses 1 and 2 in terms of CHQ performance (H3a) and firm performance (H3b). Table 5 displays the OLS regression models. Models 1 and 5 include only the controls. Model 2 presents the results for CHQ performance (CHQ cost effectiveness) and Model 6 presents the results for firm performance (Tobin's *q*). Even though our theoretical treatment focuses on how a "dispersed CHQ" affects performance outcomes, we also report the results for the "dual CHQ" (two locations) and "dispersed CHQ" (more than two locations) to offer a more comprehensive picture and to ensure consistency with the analyses of the antecedents.

Table 3
Likelihood of a spatially dispersed CHQ (First step: logit model).

	DV: dispersed CHQ (=2 or > 2 locations)			
	Model 1	Model 2	Model 3	Model 4
Constant	−7.35***	−8.93***	−9.62***	−11.82***
	(−4.23)	(−4.12)	(−4.66)	(−4.60)
Control variables				
Industry and organizational structure dummies	*incl.*	*incl.*	*incl.*	*incl.*
Geographic scope	0.35	0.45	0.42	0.58
	(0.86)	(0.96)	(0.98)	(1.09)
Firm legacy (prior M&A)	1.28	2.22+	0.87	1.53
	(1.57)	(1.84)	(1.03)	(1.09)
Firm size (ln # employees)	0.56***	0.58**	0.68***	0.70***
	(3.47)	(3.01)	(3.86)	(3.31)
Liberal market economy (Anglo-Saxon dummy)	2.02***	3.03***	1.93***	3.00***
	(4.06)	(4.34)	(3.75)	(3.95)
Hypotheses:				
Portfolio configuration: Related diversification (H1)		1.93*		2.06*
		(2.49)		(2.48)
Parenting approach: CHQ functional infl. (H2)			0.11*	0.14*
			(1.99)	(2.23)
Observations	156	132	146	122
Log likelihood	−86.88	−66.71	−79.27	−57.98
LR chi2(36)	42.51	49.46	43.83	52.87
Prob > chi2	0.0000	0.0000	0.0000	0.0000
Pseudo R-squared	0.20	0.27	0.22	0.31
Δ Pseudo R-squared		0.07	0.02	0.11

t-statistics in parentheses; +p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001.

With respect to CHQ performance, Model 2 indicates that a spatially dispersed CHQ is negatively associated with CHQ cost effectiveness ($b = -0.42$, $p < 0.01$). Model 4 provides additional support, as it shows that a dispersed CHQ is negatively associated with CHQ cost effectiveness ($b = -0.28$, $p < 0.1$). In other words, CHQ dispersion is significantly and negatively associated with the CHQ's cost effectiveness.[10] With respect to firm performance, Model 8 shows that a spatially dispersed CHQ is negatively associated with a firm's market-based performance ($b = -0.43$, $p < 0.05$).

In the next step, we examined the hypothesized contingency effects. We tested the contingency relationships between a spatially dispersed CHQ and the two strategic complexity variables by adding interaction terms to Models 2 through 4 and 5 through 8 in Table 5 for CHQ performance (H3a) and firm performance (H3b), respectively. None of the interaction terms was significant. Therefore, due to space constraints and for the sake of readability, we do not report these models.

6. Discussion

Scholarly interest in complex and dynamic HQ designs is on the rise (see Ambos & Mueller-Stewens, 2017; Birkinshaw et al., 2017; da Silva

[10] In supplementary analyses, we also tested other dimension of CHQ performance, such as the "overall effectiveness of the CHQ" and "the ability of CHQ to support corporate strategy." The results were similar, indicating an association between a spatially dispersed CHQ and various dimensions of CHQ performance.

Table 4
Multinomial logit regression results: Likelihood of a spatially dispersed CHQ.

	Model 1		Model 2		Model 3		Model 4	
	Dual CHQ (=2 locations)	Disp. CHQ (> 2 locations)	Dual CHQ (=2 locations)	Disp. CHQ (> 2 locations)	Dual CHQ (=2 locations)	Disp. CHQ (> 2 locations)	Dual CHQ (=2 locations)	Disp. CHQ (> 2 locations)
Constant	−5.40**	−11.38***	−5.97*	−14.49***	−7.08**	−14.00***	−8.58**	−17.91***
	(−2.62)	(−4.81)	(−2.42)	(−4.74)	(−2.98)	(−5.13)	(−3.01)	(−5.01)
Control variables								
Industry and organizational structure dummies	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*
Geographic scope	0.21	−0.05	0.16	0.02	0.22	-0.02	0.18	0.08
	(1.08)	(−0.27)	(0.78)	(0.10)	(1.08)	(-0.08)	(0.80)	(0.31)
Firm legacy (prior M&A)	1.03	1.64+	1.62	2.50+	0.67	1.12	1.11	1.51
	(1.10)	(1.80)	(1.24)	(1.74)	(0.72)	(1.18)	(0.78)	(0.89)
Firm size (ln # employees)	0.34+	0.86***	0.34	0.89***	0.44*	0.96***	0.45+	0.98***
	(1.69)	(4.01)	(1.52)	(3.40)	(2.11)	(4.21)	(1.86)	(3.52)
Liberal market economy	1.20*	2.95***	1.76*	4.82***	1.12+	2.91***	1.82*	5.03***
(Anglo-Saxon dummy)	(2.15)	(3.91)	(2.28)	(4.31)	(1.94)	(3.76)	(2.21)	(4.14)
Portfolio strategy								
Related diversification (H1)			0.97	3.33**			1.24	3.54**
(entropy measure)			(1.08)	(3.18)			(1.33)	(3.14)
Parenting approach								
CHQ functional infl. (H2)					0.06	0.14*	0.11	0.18*
					(0.88)	(2.17)	(1.52)	(2.23)
Observations	156		132		146		122	
Log likelihood	−132.05		−102.70		−122.15		−92.44	
LR chi2	59.00		70.79		59.30		71.66	
Prob > chi2	0.0000		0.0000		0.0000		0.0000	
Pseudo R2	0.1826		0.2563		0.1953		0.2793	

z-statistics in parentheses; +p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001.
The omitted category (the base category) is "integrated CHQ" (all CHQ staff housed at one location).

Lopes et al., in press; Kunisch et al., 2015; Menz et al., 2015; Nell et al., 2017). In this article, we present the first comprehensive, large-scale study of the internal antecedents and performance consequences of operating a CHQ that is spatially dispersed across more than one location. Overall, our analysis of unique survey data and archival data for a sample of 156 public firms across multiple industries and domiciled in Germany, the Netherlands, the UK, and the US offers empirical support for the hypothesized associations between a firm's portfolio strategy and parenting approach and its CHQ's spatial dispersion. However, we do not find empirical support for the hypothesized contingency effects. Instead, we find that spatial dispersion of the CHQ is associated with lower CHQ cost effectiveness and lower firm performance. These empirical findings suggest that firms that adopt spatially dispersed CHQs as a means of *fighting (strategic) complexity with (spatial) complexity* may face coordination costs that outweigh the benefits of dispersion and that they may, therefore, perform poorly relative to firms with simpler, more spatially concentrated CHQs.

6.1. Key contributions

The insights provided here contribute to our knowledge about the CHQ and advance information-processing theory as a particularly useful lens for studying design choices, including decisions about the spatial dispersion of the CHQ and correspondingly complex HQ-subsidiary relations. First, our study applies information-processing theory in a domain that has received little attention. While information-processing theory (Egelhoff, 1982, 1991) has been a popular perspective for studies of organizational design (e.g., Collis et al., 2007, 2012; Dobrajska et al., 2015; Egelhoff, 2010; Egelhoff, Wolf, & Adzic, 2013), we focus on the CHQ's spatial design as a source of an organization's information-processing capacity by linking the complexity arguments underlying the information-processing perspective to the CHQ's spatial design. Responding to Nell et al.'s (2017) call to study complex HQ configurations through an information-processing lens, our study supports the information-processing perspective as a general theory of CHQ.

On the antecedent side, our study suggests that the configuration and coordination of a firm's portfolio, which represent the information-processing requirements for the CHQ (e.g., Collis et al., 2007, 2012), determine the information-processing capacity of the CHQ's spatial design. This finding is consistent with prior research that has considered the information-processing requirements of organizations' external and internal contexts, and their impact on the firm's overall organization structure (Egelhoff, 1982, 1991) and on the CHQ's role and design (e.g., Collis et al., 2007, 2012). More specifically, the spatially dispersed CHQ's access to unique local resources and capabilities, and its proximity to the firm's internal and external stakeholders (Baaij et al., 2015) allow it to deal with complexity and information-processing demands.

On the outcome side, our findings suggest that spatial dispersion negatively affects the CHQ's cost effectiveness. In this regard, our study provides an initial answer to the question raised by Nell et al., (2017, p. 1135): "Do the benefits of disaggregated and dispersed headquarters structures outweigh the costs of additional information processing?". Our findings support the conceptual work of Baaij and Slangen (2013), who argue that the disaggregation of headquarters "yields multiple HQ–subsidiary geographic distances, all of which are a likely source of ex post communication costs, and hence are likely to co-determine HQ decisions about subsidiaries" (p. 941). More generally, our study suggests that while spatial dispersion may enhance the CHQ's information-processing capacity, the negative effects of this design choice, such as ex-post communication costs between the various parts of the CHQ and the different operating units (Baaij & Slangen, 2013), need to be considered as well. Hence, by revealing that the CHQ's spatial dimension is critical for an organization's information processing, our study substantiates information-processing theory as a useful lens for the study of multinational and/or multidivisional corporations, which are characterized by complex CHQ-subsidiary relations (Baaij & Slangen, 2013; Schulte Steinberg & Kunisch, 2016).

Second, our findings contribute to the emerging body of knowledge about complex HQ configurations (see Nell et al., 2017). While prior

Table 5
Performance effects of a spatially dispersed CHQ (Second step: OLS regression model).

	CHQ performance: cost effectiveness				Firm performance: Tobin's *q*			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	3.69***	2.97***	3.64***	3.52***	−0.30	−0.53	−0.28	−0.56
	(6.52)	(4.97)	(6.42)	(6.22)	(−0.47)	(−0.76)	(−0.44)	(-0.88)
Control variables								
Country and industry dummies	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*	*incl.*
Geographic scope	−0.04	−0.04	−0.03	−0.04	0.10	0.09	0.09	0.08
	(−0.66)	(−0.86)	(−0.64)	(−0.81)	(1.64)	(1.56)	(1.63)	(1.45)
Firm legacy (prior M&A)	−0.14	−0.12	−0.19	−0.06	−0.63*	−0.62*	−0.60*	−0.54+
	(−0.56)	(−0.48)	(−0.74)	(−0.25)	(−2.25)	(−2.22)	(−2.14)	(−1.97)
Firm size (ln # empl)	−0.12	−0.11	−0.11	−0.11	−0.04	−0.04	−0.04	−0.02
	(−1.62)	(−1.56)	(−1.61)	(−1.59)	(−0.55)	(−0.47)	(−0.53)	(−0.30)
Inverse Mills Ratio	0.16	−0.02	0.14	0.07	−0.08	−0.14	−0.07	−0.21
	(0.77)	(−0.10)	(0.68)	(0.32)	(−0.38)	(−0.62)	(−0.33)	(−0.98)
Predictor variables (H4)								
Dispersed CHQ[a]		−0.42**				−0.15		
		(−3.08)				(−0.98)		
Dual CHQ			−0.21				0.19	
(=2 locations)			(−1.44)				(1.25)	
Dispersed CHQ				−0.28+				−0.43*
(> 2 CHQ locations)				(−1.73)				(−2.57)
Observations	119	119	119	119	110	110	110	110
F	1.73	2.24	1.76	1.82	3.36	3.25	3.30	3.72
Prob > F	0.0413	0.0044	0.0340	0.0264	0.0000	0.0000	0.0000	0.0000
R-squared	0.26	0.33	0.28	0.28	0.43	0.44	0.44	0.47
Δ R-squared		0.07	0.02	0.02		0.01	0.01	0.04
Adj. R-squared	0.11	0.18	0.12	0.13	0.30	0.30	0.31	0.34
Δ Adj. R-squared		0.07	0.01	0.02		0.00	0.00	0.04

t-statistics in parentheses; +p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001.

[a] Note: This variable has a value of 1 if a firm's CHQ staff is dispersed across more than one location. In other words, the firm either operates a 'dual CHQ' (=2 locations) or a 'dispersed CHQ' (> 2 CHQ locations). Model 2, for example, shows that a dispersed CHQ (either a dual CHQ or dispersed CHQ across more than 2 locations) has a significant negative association with cost effectiveness.

research has focused on other HQ levels, such as RHQs and RMMs (Alfoldi et al., 2017; Belderbos et al., 2017; Kahari et al., 2017; Schotter et al., 2017), and on external factors associated with CHQ (re-)location decisions (e.g., Baaij et al., 2015; Birkinshaw et al., 2006), our study's focus on internal antecedents of spatially dispersed CHQs provides a more complete picture of the factors that drive choices pertaining to the CHQ's spatial dimension.

In particular, the existence of spatially dispersed CHQs affects extant CHQ location research (e.g., Coeurderoy & Verbeke, 2016; Meyer & Benito, 2016). For example, agglomeration research and IB research suggest that CHQ location matters not only in absolute terms but also in relation to the firm's operating units (e.g., Baaij & Slangen, 2013; Chen, Park, & Newburry, 2009; Collis et al., 2012; Law, Song, Wong, & Chen, 2009; Montague, 1986), as it may affect information-processing capacity, reflect symbolic value, and ensure proximity to financial stakeholders or other CHQs. Some researchers suggest that the geographical distance between the CHQ and the firm's international subsidiaries affects the CHQ's interactions with the firm's subsidiaries as well as the firm's profitability (e.g., Baaij & Slangen, 2013; Boeh & Beamish, 2011; Bouquet & Birkinshaw, 2008). This line of research needs to be advanced to account for multiple CHQ locations.

Third, our findings contribute to research on CHQ-subsidiary relations. Responding to calls by Nohria and Ghoshal (1994), among others, IB scholars have advanced our knowledge of CHQ-subsidiary relations by accounting for heterogeneity in a firm's subsidiaries (see Kostova, Marano, & Tallman, 2016). Our study contributes to this research by stressing the need to account for heterogeneity in the CHQ's spatial design. While most of the extant research has conceptualized CHQ-subsidiary relations as 1-n relations (Kostova et al., 2016; Menz et al., 2015; Nell et al., 2017), our study suggests that they resemble n-n relations, at least in the case of spatially dispersed CHQs. Future CHQ-subsidiary research may thus benefit from focusing on a different level of analysis (i.e., shifting from the CHQ as a whole to parts of the CHQ).

In addition to these contributions to theory, we believe that our study makes an important empirical contribution, which highlights the needs to revisit some of the extant knowledge and engage in further research. Notably, our historical analysis reveals that the dispersion of CHQ activities is not purely a recent phenomenon, as we find evidence of the dispersion of CHQs during the 1990s. Firms have been operating with these multi-locational models for many years. Even if the dispersion of CHQ activities is on the rise today, it is instructive to realize that we are observing a difference in degree in terms of how CHQs are configured, rather than a difference in kind. The observation that CHQ dispersion is not a new phenomenon underlines the need to better understand how this trend towards multi-location HQs changes over time.

In sum, by revealing the CHQ's spatial design as an important aspect of the management and functioning of the multi-business firm, our study complements the nascent research strand that explores spatial CHQ designs, such as dual and dispersed CHQs (Baaij & Slangen, 2013; Baaij et al., 2004, 2015; Birkinshaw et al., 2006, 2016, 2017; Desai, 2009). Consequently, research on the role of the CHQ in large firms in general (see Ambos & Mahnke, 2010; Andersson & Holm, 2010; Chandler, 1991; Ferlie & Pettigrew, 1996; Foss, 1997; Menz et al., 2015), which has largely neglected both the CHQ's spatial dimension and complex CHQ designs, should incorporate the findings of this emerging stream of research.

6.2. Practical implications

The insights of our study also have important implications for practicing managers. Notably, we find that CHQ spatial dispersion is negatively associated with CHQ cost effectiveness and the firm's market-based financial performance. This suggests that the costs

associated with a spatially dispersed CHQ, such as increased coordination costs, exceed the benefits associated with coping with task demands. This finding is in line with prior research on multi-business firms, which reveals increasing coordination costs when attempting to achieve synergies (Rawley, 2010; Zhou, 2011). Our results seem to point to a similar tradeoff for the spatially dispersed CHQ—the more an organization's complexity and information-processing demands require functional specialization at the corporate level and, thus, would benefit from a spatially dispersed CHQ, the higher the coordination costs will be. In sum, the negative associations between a spatially dispersed CHQ and CHQ cost effectiveness, and between a spatially dispersed CHQ and market-based firm performance suggest that firms should be cautious in selecting such a complex CHQ design.

In addition, in light of prior findings that firms may introduce dispersed CHQs because of external demands and expectations (Baaij et al., 2015; Birkinshaw et al., 2006), we could speculate that firms might not sufficiently consider the additional costs and coordination efforts that such moves entail. Our results regarding the negative association between the CHQ's spatial dispersion and its cost effectiveness and between spatial dispersion and the firm's financial performance are, at least partly, consistent with other studies' findings concerning the relation between CHQ design and performance (e.g., Baaij & Slangen, 2013; Collis et al., 2007). However, our knowledge in this regard is still inconclusive. Therefore, future research should further explore whether and how the CHQ's design choices affect various outcomes, such as value creation and performance.

6.3. Limitations and future research

This study has several limitations, which simultaneously offer vital opportunities for future research. First, we acknowledge certain limitations regarding the study's sample and data. Our data stem from surveys that were completed near the end of the twentieth century. As such, they cannot inform us about current trends in spatial CHQ dispersion. In fact, despite recent prominent examples, we do not know whether a spatially dispersed CHQ is more common today that it was at the time of the surveys. For example, Birkinshaw et al. (2006, p. 698) note that "some MNCs even claim that they do not have a corporate HQ per se, opting instead for a virtual HQ and the rotation of top management team meetings around a number of major cities." Other studies provide similar examples (Krishnamoorthy, 2015; Kunisch, Müller-Stewens, & Collis, 2012). According to General Electric's previous CEO Jeffrey Immelt, modern advances in communication technologies have made it easier to split the CHQ's workforce among several locations (TheBostonGlobe, 2016). Therefore, the replication of our research in a modern context could provide additional insights. In particular, such research might focus on whether globalization (e.g., Roth, 2011) and technological progress, which are often believed to compress time, costs, and distance, have increased the tendency to spatially disperse CHQs (e.g., Krishnamoorthy, 2015).

Moreover, the study's sample focuses on the largest listed firms in the countries included in our study, which might suggest that the generalizability of our findings is limited to these firms. While this focus was necessary in order to collect data from public sources and examine the study's focal phenomenon—i.e., the CHQ and its spatial dispersion may be less relevant for smaller firms that focus on single businesses; (Collis et al., 2007, 2012)—, this limitation calls for studies of other types of firms, including family-owned businesses and smaller, diversified companies.

Second, we acknowledge several measurement limitations that may be addressed in future studies. With regard to the measurement of the CHQ's spatial dispersion, we do not know *where* the dispersed CHQ locations were, or how distant they were from one another or from internal and external stakeholders. Relatedly, we do not know *what* activities were carried out at which locations and which activities were co-located. Relatedly, we do not have information on *when* the firms included in our study introduced spatially dispersed CHQs, which may affect the effectiveness of this CHQ configuration. While these concerns are beyond the scope of our study, they highlight interesting avenues for future research. For example, some evidence indicates that firms are increasingly bundling certain types of CHQ activities, such as services, and co-locating or even outsourcing them (Campbell, Kunisch, & Müller-Stewens, 2012; Goold, Pettifer, & Young, 2001; Gospel & Sako, 2010). Other evidence shows that firms tend to relocate specific CHQ functions (Baaij et al., 2015; Birkinshaw et al., 2006). In addition, we acknowledge limited variance in some of the survey measures. Even though we complemented the survey data with archival data, which allowed us to use established measures to some extent, the variance in some of the original three-point survey scales (e.g., CHQ performance) is limited. This calls for the development of more advanced measures.

Third, we cannot entirely rule out the possibility of reverse causality. Even though our theoretical arguments from the information-processing perspective suggest that a firm's portfolio strategy and parenting approach affect its decision to introduce a spatially dispersed CHQ, and that this choice may affect a firm's performance, the direction of some of the relationships may be reversed. To mitigate endogeneity concerns, we used multiple data sources, utilized a lagged empirical design to test the hypothesized relationships when possible, and applied a manual two-stage Heckman selection method to correct for potential self-selection-based endogeneity in the performance analyses (Bascle, 2008; Clougherty et al., 2016; Hamilton & Nickerson, 2003; Shaver, 1998). However, future research should address this limitation and focus on developing an in-depth understanding of the causal mechanisms and processes that affect choices regarding the CHQ's spatial dispersion and their consequences.

Fourth, in light of the negative performance implications of a spatially dispersed CHQ, we believe that there is a need to learn more about possible alternative solutions and other performance outcomes. While our results indicate that some firms "fight complexity with complexity" by spatially spreading their CHQs, there may be alternatives to this approach. Furthermore, we need to know more about whether and how the CHQ's spatial design affects other HQ levels in the organization (e.g., Ciabuschi et al., 2012), and how that design influences the firm's relations with its internal and external stakeholders.

7. Conclusions

In sum, using unique survey and archival data covering a large-scale sample of firms, our study offers the first comprehensive analysis of the antecedents and performance consequences of spatially dispersed CHQs. Building on arguments from information-processing theory, we find that information-processing complexity leads firms to introduce spatially dispersed CHQs in order to address their internal task demands. As we find that such a decision affects CHQ- and firm-level outcomes, our study suggests a need to consider the spatial configuration of the CHQ as an important factor that influences the CHQ's functioning. We hope that our study stimulates additional research into the more complex CHQ designs that seem to have become the empirical reality.

Appendices

See Tables A1 and A2.

Table A1
Overview of the study's measures.

Variables	Definition	Source	Reference
CHQ spatial dispersion	# of locations that house CHQ staff (including separate corporate R&D and service locations). Categorical (3 values): 1 = 1; 2 = 2; 3 ≥ 3	Survey	Young et al. (2000)
Portfolio strategy			
Product diversification	Entropy measures of total, related and unrelated diversification	Thomson One Banker	Palepu (1985)
Parenting approach			
CHQ functional influence	Score (0–15) based on strength of corporate influence in five functional areas: HR, R&D, marketing, purchasing/logistics, and IT	Survey	Collis et al. (2007, 2012)
Performance			
CHQ cost effectiveness	Scale (1–3): 1 = needs improving in many areas; 2 = needs improving in some areas; 3 = good in most areas	Survey	Collis et al. (2007, 2012)
Tobin's q	Market-based performance measure; calculated as the ratio of the sum of market value of the firm and book value of its debt to its total assets	Thomson One Banker	Chung and Pruitt (1994), Lang and Stulz (1994) and Wernerfelt and Montgomery (1988)
Controls			
Anglo-Saxon dummy	Binary (0/1) based on the firms' legal domicile: 1 = UK and US firms; 0 = DE and NL firms	Survey	Various, e.g., Collis et al. (2007, 2012)
Industry sector	Dummy variables based on one-digit SIC codes of the firms' primary business	Thomson One Banker	Various
Geographical scope	Scale (1–4): 1 = primarily in one country; 2 = primarily in a number of countries on one continent; 3 = primarily on two continents; 4 on three or more continents	Survey	Collis et al. (2007, 2012)
Firm size	Log (# of employees)	Both: Survey & Thomson One Banker	Various, e.g., Josefy, Kuban, Ireland, and Hitt (2015)
Prior Merger	Binary (0/1): 1 = prior merger; 0 = not	Company reports and websites	Various

Table A2
Linear regression results: Antecedents of CHQ spatial dispersion.

	DV: Extent of CHQ spatial dispersion			
	Model 1	Model 2	Model 3	Model 4
Constant	−1.50*	−1.70**	−2.50***	−2.88***
	(−2.53)	(−2.67)	(−3.71)	(−4.04)
Control variables				
Industry and organizational structure dummies	*incl.*	*incl.*	*incl.*	*incl.*
Geographic scope	−0.02	−0.00	−0.01	0.02
	(−0.37)	(−0.01)	(−0.16)	(0.29)
Firm legacy (prior M&A)	−0.09	0.20	−0.08	0.24
	(−0.23)	(0.40)	(−0.19)	(0.50)
Firm size (ln # employees)	0.29***	0.26***	0.33***	0.30***
	(4.87)	(4.05)	(5.42)	(4.70)
Liberal market economy	0.79***	1.06***	0.82***	1.13***
(Anglo-Saxon dummy)	(4.67)	(5.57)	(4.69)	(5.75)
Hypotheses				
Portfolio configuration:		0.77**		0.81**
Rel. diversification (H1)		(3.21)		(3.38)
Parenting approach:			0.05*	0.06**
CHQ functional infl. (H2)			(2.51)	(2.63)
Observations	156	132	146	122
F	6.78	7.48	6.85	7.95
Prob > F	0.0000	0.0000	0.0000	0.0000
R-squared	0.27	0.36	0.31	0.42
Δ R-squared	0.11	0.20	0.15	0.26
Adj. R-squared	0.23	0.31	0.27	0.36
Δ Adj. R-squared	0.11	0.19	0.15	0.24

t-statistics in parentheses; $^{+}p < 0.1$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

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