Demand-side strategy, relational advantage, and partner-driven corporate scope: The case for client-led diversification

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Research Summary: We advance research on corporate diversification by joining insights from the demand-side and relational views in strategy to offer a novel theory of client-led diversification. We propose that client-led diversification results from a combination of the customer-driven opportunities emphasized in the demand-side view and the creation of added value through relational assets that is a central tenet of the relational view. Furthermore, we hypothesize that suppliers’ customer-specific knowledge, clients’ relational commitment to suppliers, and growth opportunities in clients’ markets (relative to the suppliers’ own markets) will magnify the client-led diversification effect. We test our hypotheses using a longitudinal dataset on patent law firms and their diversification into new domains of patent prosecution work for their corporate clients.

Managerial Summary: Explanations of why firms diversify into new lines of business have largely concerned the redeployment of underutilized resources, with little regard to opportunities or influences stemming from firms’ existing customers. In our article, we show how the changing scope of business needs from a knowledge-based supplier firm’s set of existing clients is a central driver of supplier-firm diversification, and this is especially the case when the level of relational assets shared between a supplier and its clients is higher. In a competitive landscape where suppliers compete intensively for the business of clients, our results show how managers can increase the likelihood of capturing additional business from its existing exchange relationships rather than bearing the risks of seeking new exchange relationships.
1 | INTRODUCTION

Understanding why firms diversify is a fundamental research question of interest to the strategic management field (Rumelt, Schendel, & Teece, 1994). In the prior research literature, the dominant explanation for diversification has been based on synergies derived from unique noncontractible resources of the firm that can be deployed across multiple business domains (Chang, 1996; Farjoun, 1994; Miller, 2004; Montgomery & Hariharan, 1991; Robins & Wiersema, 1995; Silverman, 1999; Teece, 1980, 1982). However, we currently know very little about how diversification is affected by firms’ external relationships with business partners, which may play an important role in firms’ discovery of and response to opportunities for expanding corporate scope (Zander & Zander, 2005). In this article, we combine insights from research on the demand-side in strategy (e.g., Priem, 2007; Priem, Li, & Carr, 2012; Schmidt, Makadok, & Keil, 2016) and on the relational view (e.g., Dyer & Singh, 1998; Kale, Singh, & Perlmutter, 2000) to explain why and when firms might diversify in response to diversification by their business partners, specifically by clients in professional services. We thus develop and test a theory of “client-led diversification.”

Scholarship on the demand-side has sought to complement the resource-based view by focusing attention on the preferences of and value derived by customers, and highlighting the strategic implications of such value-creation opportunities for firms (Adner & Zemsky, 2006; Priem, 2007). An important aspect of customer value creation explored in the demand-side literature is the concept of customer-specific synergy, which comes about when there exists “cross-market correlation of customer preferences” (Schmidt et al., 2016: p. 870) or “product and/or service combinations that together expand the consumer utilities offered by the individual products or services” (Ye, Priem & Alshwer, 2012: p. 209). Research has highlighted a number of sources of customer-specific synergies, including complementarities between products in use (Cottrell & Nault, 2004; Nayyar, 1993), customer scope economies in time and attention (Ye et al., 2012), customer familiarity and intimacy with a firm that sells multiple products (Akçura & Srinivasan, 2005), and relational assets that facilitate customer–supplier transactions across multiple offerings (Chatain & Zemsky, 2007). In turn, both quantitative and qualitative evidence suggests that customer-specific synergies create opportunities for firms to diversify by cross-selling multiple products or services to customers (Lemelin, 1982; Ye et al., 2012; Zander & Zander, 2005). We respond to calls for research that empirically “examine[s] the types of resources that underlie customer synergies” (Schmidt et al., 2016: p. 892) by focusing attention on the implications for diversification from the relational capital shared between firms and their clients.

The relational view has its foundations in the value that can be created when exchange partners jointly make investments in relationship-specific resources, capabilities, and dispute resolution mechanisms (Dyer & Singh, 1998; Kale et al., 2000; Madhok & Tallman, 1998; Zajac & Olsen, 1993). Investments in relational capital—such as dedicated assets, interfirm routines, and relational governance mechanisms—can enhance the productivity of exchange relationships while also...
managing the attendant risks of opportunistic behavior (Asanuma, 1989; Dyer, 1996; Williamson, 1985; Zaheer, McEvily, & Perrone, 1998; Zollo, Reuer, & Singh, 2002). Not surprisingly, relational capital has been shown to have significant advantages in managing buyer-supplier relationships, resulting in improved transactional performance, longevity of relationships, and the ability to capture new business (Baker, Faulkner, & Fisher, 1998; Chatain, 2011; Gulati & Nickerson, 2008; Hoetker, 2005). Although the relational view has developed deep insights into the coordination of vertical interfirm relationships, the question of how these relationships and relational capital affect horizontal corporate scope remains largely unexplored.

However, both prior research and managerial experience indicate the potential relevance and importance of this research question. Consistent with relational capital being a source of customer-specific synergies, research has found that buyers often prefer to select an existing supplier when they have a new outsourced need (Chatain, 2011; Chatain & Mindruta, 2017) and that firms may have an “inside track” to new business opportunities with their customers (Zander & Zander, 2005). Additionally, buyer firms may prefer to buy from the same supplier when interdependencies or complementarities exist between these outsourced needs (Moeen, Somaya, & Mahoney, 2013; Novak & Stern, 2009; Ye et al., 2012). Thus, prior research appears to provide some support for the idea that firms may diversify by following the diversification of their partner clients. Such client-led diversification is likely to be an especially important phenomenon in this article’s focal context of outsourced knowledge-based services (e.g., accounting, advertising and legal services, management and technical consultancies), which are generally difficult to explicitly contract for and often rely to a significant degree on interfirm relationships and relational capital (Mayer & Nickerson, 2005; Moeen et al., 2013; Poppo & Zenger, 2002). For example, Dennis McWilliams, a key partner in the intellectual property law firm Lee, Mann, Smith, McWilliams, Sweeney and Ohlson (Lee Mann), explained the reason his firm had diversified by merging with Barnes and Thornburg LLP (in 2002) as follows:

[Lee Mann has] been successful as an intellectual property firm, but we are finding with greater frequency that our clients are requiring a broader range of legal services than we can provide.2

Despite managerial awareness of this motivation for diversification, however, further research is needed to understand the theoretical drivers of client-led diversification, and to provide systematic empirical evidence for when and why it may occur.

In this article, we draw on theory from the demand-side and relational advantage to develop and test a set of hypotheses about how the horizontal scope of supplier firms is driven by the changing scope of their clients. In addition to our baseline prediction that diversification by supplier firms will be client-led, we hypothesize that this effect will be stronger when a supplier has higher levels of client-specific knowledge and when clients have higher relational commitment to the supplier, thus highlighting the roles of specific relational assets in client-led diversification. Finally, drawing on research about the demand-side (Priem, 2007; Priem et al., 2012; Wu, 2013; Zander & Zander, 2005), we also examine whether differences in market opportunity between the firm’s current business domains and those of its clients may stimulate client-led diversification. We test our hypotheses on a longitudinal sample of patent law firms, which contains detailed project-level data on outsourcing, relational assets, and (client and supplier) firm diversification.

1Although this article and its empirical analyses are set in the context of knowledge-based services, our theorizing and propositions may be extended (with deliberate care) to other contexts, which we elaborate on in the Discussion section.
Our research seeks to make a number of contributions to the research literatures on corporate diversification, the demand side, and relational advantage. First, in contrast with traditional explanations for diversification based on synergies generated from shared or redeployed *internal* resources (Chatterjee & Wernerfelt, 1991; Levinthal & Wu, 2010; Sakharov & Folta, 2014; Teece, 1982), we advance an understanding about diversification that is driven by a firm’s *external* relationships. As noted above, such client-led diversification may be especially prevalent in the rapidly growing sector of knowledge-based services, and therefore of significant value for future research and practice. Second, we contribute to the emerging literature on demand-side strategy (e.g., Adner & Zemsky, 2006; Priem, 2007; Schmidt et al., 2016; Ye et al., 2012) by systematically examining the implications of an important source of customer-specific synergies—namely, relational capital—for diversification strategy. Finally, our research extends the relational advantage literature by theorizing and empirically demonstrating linkages between the well-known advantages of relational capital for interfirrm relationships (e.g., Dyer, 1997; Kale et al., 2000; Zaheer et al., 1998) and dynamic partner-led changes in horizontal corporate scope.

2 | THEORY AND HYPOTHESES

The implications of changes in client diversification for a focal firm’s own diversification are palpable from the demand-side view, which posits that the sources of customer value are important determinants of firm strategy and competitive advantage. Clients may perceive value in buying from the same supplier for multiple reasons, including one-stop shopping (Chatain & Zemsky, 2007; Cottrell & Nault, 2004), reduced search costs for new suppliers (Chatain & Mindruta, 2017; Klemperer & Padilla, 1997; Priem, 2007), potential complementarities between ongoing and new outsourced activities (Moeen et al., 2013; Novak & Stern, 2009; Siggelkow, 2003), client-specific knowledge (Chatain, 2011; Mayer, Somaya, & Williamson, 2012), and other sources of relational capital such as shared governance, interorganizational routines and joint problem solving (Dyer & Singh, 1998; Macneil, 1980; Zander & Zander, 2005). Moreover, because many of these sources of value are at least in some degree specific to the supplier firm, they constitute opportunities for added value that can confer to the firm a competitive advantage in the provision of these services (Ye et al., 2012). A supplier firm can profitably take advantage of these opportunities for value added by diversifying into the new areas of outsourced business being offered by its clients (Schmidt et al., 2016).

The relational view is theoretically grounded in the premise that relationship-specific assets and relational governance can improve exchange performance and increase future transactions between exchange partners (Chatain, 2011; Dyer & Singh, 1998; Gulati & Nickerson, 2008; Hoetker, 2005). Investments in relational capital and relational governance are important both for realizing relational value (Dyer & Singh, 1998; Zajac & Olsen, 1993) and for mitigating the hazards of transacting with potentially opportunistic partners in uncertain environments (Dyer, 1997; Kale et al., 2000; Poppo & Zenger, 2002; Ring & Van de Ven, 1994; Williamson, 1979; Zaheer et al., 1998). Critically, relational governance embeds norms of trust and cooperation, which enable contractual adaptation and management of partner conflict (Gulati, 1995; Macneil, 1980; Uzzi, 1997; Vanneste & Frank, 2013; Vanneste, Puranam, & Kretschmer, 2014), while interfirrm routines, tacit partner-specific knowledge, and a longer-term perspective incentivizes joint value creation and increases relational commitment (Dyer, 1997; Dyer & Chu, 2003).

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3 “Professional and business services” contributed over $2.2 trillion (12.2%) in GDP value added to the United States in 2015, and grew faster than manufacturing in virtually every year in the last 4 decades (except 2009 and 2010). This sector is now larger than all U.S. manufacturing, whereas in 1977 its GDP value added was one-fourth of manufacturing. (https://www.bea.gov/newsreleases/industry/gdpindustry/gdpindnewsrelease.htm)
Traditionally, the literature on relational advantage has adopted the partner dyad as its focal unit of analysis (e.g., Dyer, 1997; Kale et al., 2000). However, diversification is inherently a firm-level phenomenon, and as such requires a firm-level perspective on the aggregated impact of the supplier firm’s set of client relationships. Accordingly, in our own theorizing and empirical analysis, we follow recent research that analyzes interfirm relationships as portfolios at the firm level (e.g., Lavie, 2007; Moeen et al., 2013; Wassmer, 2010) by examining both client diversification and relational assets shared with clients at the aggregated supplier-firm level. Intrinsically, this approach takes the view that supplier firms may vary in their degree of “relationalism,” whereby some suppliers adopt a more relational approach with clients—characterized by higher levels of relational assets and commitments toward future exchanges—while others are more transactional, thus placing less reliance on relational assets (Baker, 1990; Broschak, 2015; Macneil, 1980). Our article therefore explores the implications of relationalism for understanding the drivers of client-led diversification.

Additionally, since relational capital is built and shared within partner-firm dyads, the relational view would posit that both partners are bonded in these relationships. Thus, a more general case of the phenomenon we investigate is partner-led diversification, where either client-led or supplier-led outcomes are feasible. However, within our focal context of knowledge-based services, it is arguably more likely that diversification is client-led, for two main reasons. First, in knowledge-based buyer–supplier relationships, client firms are more likely to drive adaptation because they are responsible for delivering value to the end consumer, a feature that is emphasized in demand-side research (Priem, 2007; Priem & Swink, 2012). Second, client firms are likely to have greater bargaining power in these relationships, at least in part because they contribute more to the total value being created. For example, in our empirical context, the client firms conduct R&D and invent new technologies, whereas the suppliers are merely responsible for the legal work related to patenting. Later in this article, we discuss the more general case for partner-led diversification, as well as empirical evidence that supports the case for client-led diversification in our empirical context.

### 2.1 Client diversification

Both the demand-side and relational views suggest that a supplier firm’s relationships with existing clients may play an important role in inducing the supplier to diversify when the needs of clients change. For clients, many market frictions such as finding and screening suppliers, educating suppliers about new business opportunities, and ongoing communication costs are reduced when working with existing suppliers (Chatain & Zemsky, 2011; Priem, 2007; Schmidt et al., 2016). To service clients’ new needs, suppliers can also leverage shared relational assets and relational governance, and draw on internal stocks of relationship-specific capabilities such as client-specific routines and detailed knowledge of clients’ businesses (Chatain & Zemsky, 2007; Ethiraj, Kale, Krishnan, & Singh, 2005; Zander & Zander, 2005). Prior research has also emphasized the benefits of organizing activities within the same firm when the activities share inherent complementarities or spillovers (Milgrom & Roberts, 1995; Sigelkow, 2003), which might also lead clients to prefer an existing supplier for new outsourcing needs. In essence, there are a number of sources of client-specific synergies that are specific to a supplier firm that is already serving the client (Schmidt et al., 2016; Ye et al., 2012), which give the supplier a significant advantage in competing for and profiting from its clients’ new outsourced business (Chatain, 2011; Coates, DeStefano, Nanda, &

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4Moreover, partner-led diversification may also be observed in contexts where partnering is “horizontal” (such as alliances), and does not entail vertical buyer–supplier relationships.
Wilkins, 2011). Thus, the new outsourcing needs of a firm’s set of clients may become valuable diversification opportunities for the firm.

Recent scholarship on diversification has highlighted the need for a firm’s resources to be scalable (Levinthal & Wu, 2010) or redeployable (Helfat & Eisenhardt, 2004; Sakhartov & Folta, 2014) in order to support diversification. Many of the opportunities for client-specific synergies discussed above stem from relational assets, such as client-specific knowledge and client relational commitment discussed in the following sections. In turn, these relational assets typically exhibit some degree of scalability (e.g., interfirm trust, reputations, and relational governance) or redeployability (e.g., partner-specific knowledge and bilateral routines) into new areas of business with existing clients, and therefore provide a viable theoretical foundation for client-led diversification. For example, relational assets are often embedded in the firms’ human capital resources (Kale et al., 2000), which can be redeployed (or scaled) into other areas with relative ease (Farjoun, 1994). So long as a firm enjoys an advantage in creating added value for new business opportunities with its existing clients (Chatain, 2011), prior case-based research has also found evidence that the firm may be able to capitalize on this advantage by sourcing and deploying other complementary resources from the market (Zander & Zander, 2005).

A firm’s advantages in acquiring new business from existing clients are likely to be especially high in knowledge-intensive outsourcing, such as the provision of knowledge-based services. These types of transactions are strongly impacted by multiple sources of market frictions such as demand uncertainty, weak performance measurement, information asymmetry, and appropriation hazards (Mayer & Nickerson, 2005; Mayer & Salomon, 2006; Moeen et al., 2013). Therefore, in such contexts, clients may have greater confidence in their ability to jointly create value and perceive a modicum of control over the risks and hazards of outsourcing by working with an existing supplier (Nayyar, 1993). Not surprisingly, classic managerial writings on knowledge-based services often advise firms to expand by leveraging existing client relationships instead of sourcing new clients, as the latter can involve significant risks and costs in client development and mutual learning (Chatain & Mindruta, 2017; Maister, 1993; Wilkins, 2009). Moreover, if suppliers don’t respond to the new needs of existing clients, rival suppliers may have an opportunity to poach those clients in the long run (Bower, 2014) by establishing new relationships and/or increasing their added value (Chatain, 2011; Seabright, Levinthal, & Fichman, 1992). Thus, diversification by a firm’s clients can be a significant impetus for its own diversification.

However, if clients diversify into areas that the supplier firm already has a presence in, the firm may need to undertake very little diversification to service these needs. In the extreme case, if clients diversify into the supplier’s areas of strength, it may even become less diversified as a result. Therefore, while business opportunities materializing from diversification by a supplier’s set of clients can be an important demand-pull factor that leads the supplier to diversify into newer areas, such client diversification must combine both a change in the scope of business outsourced and a shift away from the focal supplier’s own business scope (these ideas are further illustrated in Figures 1 and 2 and the accompanying description of our methods). Accordingly, we propose the following:

Hypothesis 1 (H1) Greater diversification in the outsourcing needs of a supplier firm’s existing clients (away from the supplier’s current business scope) will be associated with greater supplier diversification.

2.2 Client-specific knowledge

Idiosyncratic, partner-specific knowledge is proposed in the relational view as a critical component of joint value creation (Dyer, 1996; Dyer & Singh, 1998). For a supplier, detailed knowledge about
its clients’ business priorities and idiosyncrasies, unique technologies, and organizational structures and processes may create efficiencies in learning and problem solving (Zollo et al., 2002), as well as in the identification of clients’ needs, coordination of interdependencies across projects, and more precise customization of services (Chatain & Zemsky, 2007; Ethiraj et al., 2005; Wang, He, & Mahoney, 2009). Thus, as seen from the demand-side, client-specific knowledge creates many valuable opportunities for firms to add value to their customers (Chatain & Zemsky, 2007; Priem, 2007). For example, within this article’s empirical context of legal services, commentators have noted how law firms develop and use deep knowledge about their clients’ businesses (Wilkins, 2009), which is often cited by clients as being fundamental to a successful relationship.\(^5\)

Clients may vary in the degree to which their outsourced work requires firm-specific knowledge (Mayer et al., 2012), but when the need for such client-specific knowledge is high, the competition faced by existing suppliers may be greatly reduced (Rosen, 2002). Indeed, client-specific knowledge is a specific instance of a broader category of supplier relational assets and commitments, which may give them an advantage in getting new business from existing clients. Lacking deep client-specific knowledge, new suppliers may be less able to understand the client’s key business problems or to address the precise needs of the client. In effect, rivalry for the client’s new business reduces to small numbers competition (Williamson, 1985) and the resulting shift in competitive advantage favors suppliers who have the client-specific knowledge, which is borne out by empirical evidence (Chatain, 2011; Ethiraj et al., 2005; Levinthal & Fichman, 1988; Mayer et al., 2012). In turn, these advantages in creating value added for clients make it more likely that supplier firms with greater client-specific knowledge will diversify in response to diversification by their clients.

The impetus for client-led diversification stemming from a supplier firm’s client-specific knowledge may not only be due to the potential for creating higher value for existing clients. By definition, suppliers are unable to use their client-specific knowledge effectively for other clients’ outsourced work (Klein, Crawford, & Alchian, 1978; Williamson, 1985). Thus, the limited redeployability of client-specific knowledge to work done for other clients means that a supplier may be less able to find better opportunities to generate business than with its existing clients. Moreover, uncertainty about the potential value that may be generated in alternative client relationships may produce a persistence bias (Lazzarini, Miller, & Zenger, 2008), which is likely to be higher when suppliers hold higher client-specific knowledge.

In sum, when suppliers hold significant client-specific knowledge, they have an advantage in adding value to their existing clients, and a relative disadvantage in working for new clients (Chatain, 2011; Mayer et al., 2012; Moeen et al., 2013). Even if the new business is in areas outside the current business scope of the supplier, they represent a significant opportunity to grow revenues and add value to clients. Accordingly, when a supplier’s clients undertake diversification, we posit that the supplier will be more likely to respond by increasing its own diversification when it holds higher (as opposed to lower) levels of client-specific knowledge. Thus, we propose:

**Hypothesis 2 (H2)** The greater the level of client-specific knowledge held by a supplier (developed through prior work for clients), the stronger the effect of clients’ diversification on diversification by that supplier.

\(^5\)The following comments from corporate counsels, who hire law firms for their companies, emphasize the point: “Understand the business. This can’t be overstated. … the best [attorneys] do it thoroughly to come up with results oriented and cost effective solutions that are consistent with core values of the company. And doing that is a key to a successful, long term relationship with me.” “Take time to truly learn the client's business so you understand what their needs are … [and] think strategically.” http://www.wickerparkgroup.com/ClientBestPractices/ClientBestPractices.aspx (accessed May 21, 2014).
2.3 | Relational (client) commitment

A supplier firm’s clients may vary in the extent to which they are committed to the supplier for their future outsourcing needs. Prior research suggests that clients can provide credible signals (Schelling, 1960; Spence, 1973) of their relational commitment by allocating greater shares of outsourced work to the supplier, a costly action that makes it difficult to switch business to other suppliers and thus conveys positive expectations of relationship continuity to the supplier (Moeen et al., 2013; Poppo, Zhou, & Ryu, 2008). Clients’ commitments of this nature may lead to higher levels of trust between the transacting parties (Gulati, 1995; Kale et al., 2000), and engender additional relationship-specific investments as well as stronger relational governance (Bercovitz, Jap, & Nickerson, 2006; Dyer, 1997; Macneil, 1980; Williamson, 1983). Suppliers that receive a large share of clients’ outsourced work are also better positioned to capture complementarities and knowledge spillovers between projects (Moeen et al., 2013; Novak & Stern, 2009) and develop shared routines and a common language (Mitchell & Singh, 1996; Zollo & Winter, 2002), which can in turn be a significant advantage for undertaking future outsourced work. A supplier’s share of its clients’ outsourcing is thus a specific instance of a broader category of client-side relational assets and commitments that are likely to increase supplier-client relational embeddedness (Chatain, 2011; Chatain & Zemsky, 2007).

Stronger relational commitment from clients provides a supplier with at least two advantages in pursuing business opportunities with its clients, even if these opportunities are in new domains. First, the strong commitment from clients increases the focal firm’s potential value added relative to other suppliers. Because strong relational commitment enhances relational assets, as discussed above, it increases the potential for the supplier to formulate and solve the clients’ business problems more effectively (Zajac & Olsen, 1993; Zollo et al., 2002). Other suppliers may be comparatively disadvantaged from adding value to clients in these ways. Second, supplier investments in servicing new client needs may also be better safeguarded from opportunism and other transaction hazards due to the stronger relational governance mechanisms set up for such commitment-intensive relationships (Dyer & Singh, 1998; Williamson, 1985) and the expectation of continued business that is credibly signaled by the clients’ commitment.

Additionally, because clients in high-commitment relationships are more closely tied to the focal supplier, the supplier may in turn be expected to reciprocate by servicing new client needs as they arise. In other words, being responsive to client needs may be a quid pro quo for past client relational commitment, which may also help to sustain the mutual commitment into the future in a self-enforcing manner (Poppo et al., 2008; Telser, 1980). These ideas are illustrated by the real-world experience of Eversheds LLP, which began receiving all the outsourced legal work of Tyco International in 2006, indicating a very high level of relational commitment from Tyco to Eversheds. Legal industry commentators noted:

The two-way partnership ties the firm to the client but, just as crucially, ties the client to the firm. Through the first 18 months of the deal, Eversheds has built up detailed inside knowledge of Tyco and the specific risks it faces. Changing outside counsel now would mean that Tyco has to go through the arduous process of educating a new firm. Breaking up has suddenly become a lot harder to do. (Neil, 2008, emphasis added)

Thus, Eversheds’ and Tyco’s experience highlights the bidirectional bonding between suppliers and clients when the latter make strong relational commitments, and the resulting expectation that suppliers in turn will be responsive to emerging client needs.
In summary, when clients’ relational commitments are high, the focal supplier may respond to its clients’ diversification by diversifying its own business in parallel to leverage relational assets and relational governance into the new areas of business, and to meet reciprocal client expectations regarding responsiveness. Aggregated over the supplier’s entire portfolio of clients, this rationale suggests the following hypothesis:

**Hypothesis 3 (H3)** The greater the level of relational commitment provided by clients in a supplier’s portfolio, the stronger the effect of clients’ diversification on diversification by that supplier.

### 2.4 Relative demand opportunity

Our theorizing thus far highlights the role of opportunities made available by a supplier’s relational advantages when its clients diversify their outsourced work. However, it may also be important to consider what demand opportunities exist in clients’ new markets that stretch beyond the immediately available business from the diversifying clients themselves. After all, a central premise of demand-side research is that firm strategies should be informed by a broad consideration of the sources and extent of customer value and demand (Adner & Zemsky, 2006; Priem, 2007; Schmidt & Keil, 2013). Moreover, it may be especially important to consider demand opportunities when diversifying into new markets because it is not costless for firms. By diversifying, firms incur both pecuniary and opportunity costs for many reasons—acquiring and redeploying resources, dilution of focused knowledge-based capabilities, increased coordination, and distributed managerial attention (Chatain & Zemsky, 2007; Grant, Jammine, & Thomas, 1988; Hill & Hoskinson, 1987; Montgomery & Wernerfelt, 1988; Ramanujam & Varadarajan, 1989), which may even decrease postdiversification performance in the firms’ current markets (Wu, 2013).

Nonetheless, despite these costs, opportunities to diversify—such as those presented by diversifying clients—may be valuable to suppliers if the new markets represent significant growth opportunities. Supplier firms may be able to access these opportunities by scaling or redeploying resources into these markets (Levinthal & Wu, 2010; Sakhartov & Folta, 2014), but the demand conditions of those new markets should be sufficiently attractive to justify the potential loss of forgone opportunities in suppliers’ current markets (Wu, 2013). We contend that the difference in growth rates between the supplier’s current market segments and its clients’ (outsourced) market segments provide a good measure of the relative opportunity offered by following clients into new areas. Although faster-growing client markets may generally provide better longer-run opportunities for suppliers than slower-growing ones, there may nonetheless be less incentive to diversify if these markets are not also faster growing than the firm’s existing markets, which represent the opportunity costs of diversification to the supplier. In addition to the relative opportunities offered for long-run firm growth, relatively faster-growing markets may also be more profitable due to less-intense price competition between firms (assuming oligopolistic repeat-play price competition with nonzero entry barriers) (Borenstein & Shepard, 1996; Porter, 1980).

Overall, if clients’ markets are not growing faster than a supplier’s own current markets, then the latter’s incentive to undertake client-led diversification is arguably lower, as the opportunity costs of diversification are likely to be higher than the potential gains. Thus, the relative, rather than absolute, market-demand opportunities between supplier and clients’ markets should logically enhance the demand-pull of client-led diversification. Accordingly, we predict:
Hypothesis 4 (H4) The higher the growth in the markets of a focal supplier’s clients relative to growth in the markets of the supplier, the stronger the effect of clients’ diversification on diversification by the supplier.

3 | SAMPLE AND METHODS

We tested our hypotheses using detailed longitudinal (1990–2000) data on a focal sample of U.S. patent law firms (suppliers) and their corporate clients. We identified our patent law firm sample using the official roster of registered patent attorneys published by the Office of Enrollment and Discipline (OED) of the U.S. Patent and Trademark Office (USPTO). As a requirement to practice patent law, patent attorneys must be admitted to and registered with the U.S. patent bar, after which they are listed on the patent attorney roster. Following prior research (e.g., Carnahan & Somaya, 2013; Somaya, Williamson, & Lorinkova, 2008), our sample consists of patent law firms that employed at least 10 patent attorneys in 1990, at which time most of these law firms were specialized in patent (or intellectual property) law. This cut-off ensures that the suppliers in our sample have sufficient scale to engage in meaningful diversification and build relational assets with clients, and that these variables can be measured from observed client transactions. Using a higher size cut-off would reduce sample size, however, and a cut-off of 10 attorneys strikes a good balance between these opposing considerations. Our findings are similar when using cut-offs of 11, 12, and 13 patent attorneys. We initially identified 101 U.S. patent law firms, and subsequently dropped two firms with missing patent data and two firms that failed in the second year of our observation period, yielding a final sample of 97 firms.

We examine the relationship between client and supplier diversification in patent prosecution work, which entails tasks related to the legal and administrative processes of writing and filing patent applications, and interacting with the USPTO until the patents are issued. To identify patents outsourced to our sample of patent law firms (suppliers), we obtained records of all utility patents filed (and subsequently granted) by the USPTO in the period 1986–2000. The prosecution work for each patent is a narrowly defined project that, if outsourced, represents an individual outsourcing transaction between a client and a supplier. We identify patents outsourced to our sample of suppliers by searching for each supplier’s name in the “Attorney or Agent” field of the patent, and then manually cross-checking the returned firms to ensure accuracy and to rule out false positives in the search results. Each patent record thus uniquely identifies the law firm who prosecuted the patent, the client applying for the patent, and the technology classification of the invention. Using these detailed data from the patent records, we constructed year-by-year patent portfolios for each supplier. Including additional years for variable construction (1986–1990), we identified approximately 315,000 unique patents outsourced to our sample of suppliers by almost 39,000 clients.

3.1 | Dependent variable

3.1.1 | Firm diversification

The dependent variable in this study measures the supplier’s business scope, which in this case is the scope of patent legal services across different technological domains. Patent prosecution work

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6For example, law firm Baker and Daniels was searched as “Baker and Daniels,” “Baker Daniels,” “Baker,” and “Daniels”). If the search also returned patents with (say) “Marshall T. Baker” as the patent attorney (rather than the firm Baker and Daniels), these patents were dropped.
requires both legal and technological expertise, and patent lawyers are required to have an advanced technical background (typically at least a bachelor’s degree) in addition to legal expertise that enables them to understand inventions and to write and prosecute patent applications effectively. Thus, if a patent law firm were to expand its services into new technology domains it would be undertaking work that needs different types of knowledge resources, implying a diversification of its business scope. We measured Firm Diversification by employing the technology domains that patents are classified into under the International Patent Classification (IPC) system. Akin to the Standard Industrial Classification (SIC) system, the IPC system is a nested hierarchy designed and maintained by the World Intellectual Property Organization (WIPO). Prior research has noted that, relative to the U.S. Patent Classification (USPC), the IPC system has greater quality and integrity, maps better on to industries and professions, and has a clear nested structure (Lerner, 1994).Following past practice, we used the third level of technology classification (4-digit IPC class) to build our diversification measure (Lerner, 1994; Moeen et al., 2013), which provides a good balance between granularity and meaningful technological distinctions. We calculated the supplier’s diversification across different technological domains with a Herfindahl–Hirschman index (HHI) (Palich, Cardinal, & Miller, 2000; Yang, Narayanan, & De Carolis, 2013), using the fractions of the law firm’s patents across 1806 4-digit IPCs, and subtracting this HHI index from one to obtain a diversification measure. Specifically, for each supplier $i$ in year $t$ we measure:

$$HHI_{it} = 1 - \sum_{k=1}^{n} \frac{N_{ik}^2}{N_{ik}^2}$$

where $N_{ik}$ is the share of supplier $i$ patents in the $k^{th}$ IPC, and $n$ is the total number of IPCs. HHI measures from count data can be biased (Hall, 2002), and more so when the counts are small. We followed Hall (2002) in correcting our HHI measure for this bias, as follows:

$$Firm \text{ Diversification} = \frac{(N_{it} \times HHI_{it}) - 1}{N_{it} - 1}$$

where $N_{it}$ is the total number of patents for supplier $i$ in year $t$. The resulting variable is highly skewed, so we use a logged transformation in our models to reduce heteroskedasticity.\(^8\)

### 3.2 Independent variables

#### 3.2.1 Client diversification

We measured Client Diversification as the aggregated scope of all patent prosecution work outsourced by the set of clients in a focal supplier’s portfolio in a particular year. To compute this measure, we first calculated the fraction of outsourced patents in each 4-digit IPC for each client, in each year. Second, recognizing that clients who provide more outsourced work to a supplier may have greater influence than others, we multiplied each client’s fraction of outsourced business in each IPC by their share of the focal supplier’s total business over the prior 3 years. For example, if

\(^7\)IPC classes are of the form XNNY/nnn/mm, where X denotes the “section” and NN is a number signifying the “class” and Y is the “subclass”; nnn and mm and three- and two-digit numbers denoting the “group” and “subgroup” within this class. For example, A61B contains technologies relating to “DIAGNOSIS; SURGERY; IDENTIFICATION,” which falls under the section A covering “Human Necessities” and the Class 61 covering “HEALTH; LIFE SAVING; AMUSEMENT.” See: http://web2.wipo.int/ipcpub/#refresh=page&notion=scheme&version=20140101&symbol=A61 (accessed September 3, 2017).

\(^8\)Specifically, firm diversification is measured as $[1 - \ln(HHI^{*10000})/\ln(10000)]$. Multiplying by 10,000 yields an HHI computed with percentages, which ensures that logs are positive. This transformation reflects the fact that the variable skews to the left (so the log transformation needs to be applied to the HHI term, rather than $[1-HHI]$).
client $j$ outsourced a total of 30 patents, 10 patents in IPC-1, and 20 patents in IPC-2, and accounted for 5% of supplier $i$’s work over the prior 3 years, then the weighted fraction of client $j$’s patents in IPC-1 and IPC-2 would be $(10/30)*0.05$ and $(20/30)*0.05$, respectively. We then aggregated these weighted fractions across the supplier’s entire portfolio of clients for each IPC technology domain, and used these weighted, aggregated patent-IPC shares to compute a “Client HHI” in the same way as our dependent variable. In effect, we compute a (weighted) measure of the scope of a supplier’s entire portfolio of clients, which (as illustrated in Figure 1) can act as a pull on the supplier to diversify its own business scope. Additionally, as illustrated in Figure 2, we need to adjust our measure of client diversification for the extent to which clients’ business scope overlaps with or is different from the supplier’s business scope. For example, if clients overlap more with the supplier in their

FIGURE 1  Stylized illustration of levels of client diversification, and its impact on diversification by the focal supplier. This figure displays the normalized levels (as shares of 100%) of a supplier firm’s diversification across six markets, and the normalized diversification of its portfolio of clients. Supplier diversification is identical in both (a) and (b), but the client portfolio is more diversified in (b). Thus H1 predicts that the supplier diversification induced by clients would be higher in the case illustrated by (b). However, we also account for the relatedness between the client portfolio and the supplier, which is illustrated in Figure 2.

FIGURE 2  Stylized illustration of the relatedness of client diversification, and its impact on diversification by the focal supplier. This figure displays the normalized levels (as shares of 100%) of diversification across six markets for a supplier firm and its portfolio of clients. Both supplier diversification and client diversification (as measured by HHI) are identical in both (a) and (b). However, client diversification in (a) has a higher overlap (i.e., relatedness) with the supplier’s diversification when compared to (b). Thus H1 predicts that the supplier diversification induced by clients would be higher in the case illustrated by (b), where clients are diversified further “away” from the supplier. In our empirical design, we combine the degree of diversification illustrated in Figure 1 with the direction of diversification illustrated in Figure 2 to create a client diversification variable to test Hypothesis 1.
business scope (e.g., Figure 2a), this is likely to lead to less supplier diversification than if clients expand into areas that overlap less with the supplier (e.g., Figure 2b). Accordingly, we calculated the extent to which clients diversified “away” from a supplier’s business by measuring the Mahalanobis Distance (MD) between the weighted, aggregated client scope (as measured above) and the supplier’s own scope in the prior year.\(^9\) The Client Diversification variable was then computed as the product of 1-clients’ HHI and MD, so that the diversification of clients into IPCs having low overlap with the supplier’s scope is given more weight in our measure.\(^10\)

### 3.2.2 Client-specific knowledge

A number of prior studies have employed backward patent self-citations to measure firm-specific knowledge (e.g., Moeen et al., 2013; Wang et al., 2009; Wang & Chen, 2010). Patent citations represent the “prior-art” or reference technological knowledge that the focal patent builds on. If firms cite their prior patents with greater frequency, it indicates they are building upon their own specialized technology, and, in turn, accumulating knowledge that is more firm-specific (Wang et al., 2009). Because the work of patent law firms is essentially to create strong ownership claims in technology space for their clients, it is imperative that they understand the relevant technical knowledge that their clients’ patents are building on. If clients’ patented inventions largely build on their own technologies (as measured by self-citation), then the technical knowledge that a law firm develops by working for such clients is less usable in other patent work. Thus it is more client-specific. Moreover, high client-specificity in this technical knowledge domain is also likely to mirror client-specificity in other types of knowledge such as clients’ strategies, processes, and ways of doing business. We computed our measure of Client-Specific Knowledge for each supplier by the average percentage of backward self-citations (relative to all citations) in the law firm’s patent prosecution work in the prior 3 years.\(^11\)

### 3.2.3 Relational (client) commitment

For all clients in our sample, we identified the patents outsourced to all U.S. patent law firms, and calculated the percentage of those patents that are outsourced to a supplier in our sample in the prior 3 years. In this way, we identified the share of patent work that a supplier captures from each client, where a higher share indicates that the client has made a greater relational commitment to that particular supplier (Moeen et al., 2013). We compute an aggregate supplier-level measure of Relational (Client) Commitment by summing up these client business shares weighted by the fraction of the supplier’s business from each client over the prior 3 years. Formally, for each supplier \(i\) in year \(t\), we measure:

\[
\text{Relational (Client) Commitment}_{it} = \sum_{j=1}^{n} \left( \frac{R_{jt} N_{jt}^*}{N_{jt}^*} \right)
\]

---

\(^9\)Essentially, both scope measures are denoted as vectors in the vector space defined by the set of IPCs. Mahalanobis Distance has an advantage over Euclidean Distance in that it corrects for correlations between the dimensions (in this case, IPCs) on which the distance is being calculated (Kim & Finkelstein, 2009). Because the MD does not have an upper bound of one, we divided it by 100 so that our final client diversification measure (like supplier diversification) varies between zero and one.

\(^10\)For consistency with the diversification measure of our dependent variable we used the same log transformation procedure. Specifically, Client Diversification = \(1 - \ln(\text{HHI} \times 10000)/\ln(10000)\). However it is important to note that the multiplication of the MD measure with the Client HHI leads to a unit-scale difference between Firm Diversification and Client Diversification. Therefore, these measures are not directly comparable.

\(^11\)This measure is equivalent to a weighted average measure of client-level self-citation percentages.
where $R_{ijt}$ is the number of patents worked on by supplier $i$ for client $j$ over the prior 3 years, $N_{jt}$ is the total number of patents outsourced to patent law firms by client $j$ over the same prior 3 years, and $N_{it}$ is the total number of patents worked on by supplier $i$, again over the prior 3 years.

### 3.2.4 Relative demand opportunity

This variable is measured as the difference between growth in the market segments (IPCs) that a supplier’s clients are active in and growth in the market segments that the supplier itself operates in. Using the universe of patents granted by the USPTO, we computed the running 3-year log growth in the number of patents applied for in each 4-digit IPC technology domain, and used these growth rates to compute IPC-weighted measures for “client market growth” and “supplier market growth.” In turn, we measure Relative Demand Opportunity as follows:

$$Relative\ Demand\ Opportunity_{it} = \sum_{k=1}^{n} \left( \left( \sum_{k=1}^{n} P_{kt} N_{jk} \right) \right) * N_{ijt} - \sum_{k=1}^{n} P_{kt} N_{ikt}$$

where $P_{kt}$ is the (prior) 3-year log-growth of patents in each IPC $k$, $N_{jk}$ is the 3-year fraction of client $j$ patents in IPC $k$, $N_{ij}$ is the 3-year fraction of client $j$ patents in supplier $i$’s business portfolio, and $N_{ik}$ is the 3-year share of supplier $i$’s patents in each IPC $k$.

### 3.3 Control variables

In addition to the moderating variables—Client-Specific Knowledge, Relational (Client) Commitment, and Relative Demand Opportunity—whose main effects are included in our models, we also controlled for a number of firm-level covariates that change over time. As described below, our fixed-effects models already control for average firm- and year-level variation, whether observed or unobserved, in the data. Non-patent Citation Share is measured as the 3-year share of non-patent prior art citations (such as citations to academic publications and research presentations) among all citations in a supplier’s patent portfolio. A higher share of non-patent prior art citations may be an indicator of supplier knowledge in fundamental science, which may be broadly applicable across technology (IPC) domains. Firm Size is measured as the number of patent attorneys employed by the supplier in the prior year. Larger firms typically have more multiuse assets that can be leveraged into new business segments at a lower marginal cost than smaller firms (Montgomery & Hariharan, 1991; Penrose, 1959). Firm Turnover is measured for each supplier as the percentage of patent

---

**TABLE 1** Summary statistics of key variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm diversification</td>
<td>0.406</td>
<td>0.000</td>
<td>0.592</td>
<td>0.076</td>
</tr>
<tr>
<td>Client diversification</td>
<td>0.073</td>
<td>0.000</td>
<td>0.185</td>
<td>0.029</td>
</tr>
<tr>
<td>Client specific knowledge</td>
<td>0.101</td>
<td>0.000</td>
<td>0.255</td>
<td>0.036</td>
</tr>
<tr>
<td>Relational commitment</td>
<td>0.463</td>
<td>0.010</td>
<td>0.755</td>
<td>0.122</td>
</tr>
<tr>
<td>Relative demand opportunity</td>
<td>−0.036</td>
<td>−0.259</td>
<td>0.204</td>
<td>0.051</td>
</tr>
<tr>
<td>Non-patent citation share</td>
<td>0.132</td>
<td>0.000</td>
<td>0.457</td>
<td>0.081</td>
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<tr>
<td>Firm size</td>
<td>31.428</td>
<td>2</td>
<td>183</td>
<td>25.646</td>
</tr>
<tr>
<td>Average client size</td>
<td>1.549</td>
<td>0.523</td>
<td>2.363</td>
<td>0.345</td>
</tr>
<tr>
<td>Firm turnover</td>
<td>0.072</td>
<td>0.000</td>
<td>0.536</td>
<td>0.084</td>
</tr>
</tbody>
</table>
attorney exits to number of patent attorneys. Turnover of attorneys can not only deplete a supplier’s critical resources (Coff, 1999) but lead to the dissolution of client relationships (Broschak, 2004), both of which may impact a supplier firm’s diversification. We control for the Average Client Size in a supplier’s portfolio by measuring the number of patents obtained by each client and weighting those patents by the fraction of a supplier’s business accounted for by that client in the previous 3 years. Larger clients may have a broader spectrum of outsourced needs and thus lead to more diversification.

3.4 | Econometric model

Our unit of analysis is supplier-year and our data are organized in longitudinal supplier panels over time. We are interested in modeling dynamic changes to supplier diversification over time as the outsourced needs of their clients change. To do so, we fit an ordinary least squares (OLS) panel data model that incorporates firm fixed-effects with a full set of year indicator variables. A significant test statistic in the Hausman specification test (Hausman, 1978) indicated that we should prefer the fixed-effects model over the alternative random-effects model. A significant F statistic (Wald test) also rejected the null that the year coefficients are jointly equal to zero. As described earlier, we lagged our independent and control variables by 1 year to mitigate reverse causality. We also mean center our main and moderator variables to facilitate the interpretation of interactions. Finally, we correct for error structures that are not independently and identically distributed (e.g., heteroskedastic and within-firm correlated errors) by computing robust standard errors clustered by firm. Our fixed-effects OLS estimates identify the covariates of within-firm changes in diversification while holding constant time-invariant differences between firms and secular yearly changes across the entire set of firms in our sample.

4 | RESULTS

Tables 1 and 2 report, respectively, the summary statistics and correlation matrix of variables. Table 3 presents the main results from our fixed-effects OLS model. Model 1 includes only the control variables, which indicates that on average supplier diversification is associated with lower client-specific knowledge and serving larger clients. Model 2 reports the results for Hypothesis 1, which predicted a positive relationship between the diversification of a supplier’s clients and the diversification of the supplier. The coefficient of Client Diversification is

---

**TABLE 2** Correlations between variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Firm diversification</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Client diversification</td>
<td>0.370</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Client specific knowledge</td>
<td>-0.050</td>
<td>0.180</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Relational commitment</td>
<td>0.010</td>
<td>0.080</td>
<td>-0.030</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Relative demand opportunity</td>
<td>0.000</td>
<td>-0.040</td>
<td>0.080</td>
<td>0.030</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Non patent citation share</td>
<td>-0.300</td>
<td>-0.010</td>
<td>-0.030</td>
<td>-0.050</td>
<td>-0.250</td>
<td>1.000</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>7. Firm size</td>
<td>-0.070</td>
<td>0.390</td>
<td>0.190</td>
<td>-0.040</td>
<td>-0.130</td>
<td>0.330</td>
<td>1.000</td>
<td></td>
<td></td>
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<tr>
<td>8. Average client size</td>
<td>-0.310</td>
<td>0.350</td>
<td>0.440</td>
<td>-0.130</td>
<td>0.140</td>
<td>0.080</td>
<td>0.390</td>
<td>1.000</td>
<td></td>
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<tr>
<td>9. Firm turnover</td>
<td>0.000</td>
<td>0.040</td>
<td>0.020</td>
<td>-0.010</td>
<td>0.090</td>
<td>0.160</td>
<td>0.140</td>
<td>0.120</td>
<td>1.000</td>
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TABLE 3  Main results: determinants of firm diversification (fixed-effects ordinary least squares models)

<table>
<thead>
<tr>
<th>Independent and control variables</th>
<th>Model 1 Controls</th>
<th>Model 2 Hypothesis 1</th>
<th>Model 3 Hypothesis 2</th>
<th>Model 4 Hypothesis 3</th>
<th>Model 5 Hypothesis 4</th>
<th>Model 6 Full model</th>
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</thead>
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<tr>
<td>Client diversification</td>
<td>H1</td>
<td>0.399</td>
<td>0.472</td>
<td>0.428</td>
<td>0.395</td>
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<td></td>
<td></td>
<td>(0.177)</td>
<td>(0.171)</td>
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<td>−0.295</td>
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<td>(0.016)</td>
<td>(0.009)</td>
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<td>[0.098]</td>
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<td>−0.000</td>
<td>−0.000</td>
<td>−0.000</td>
<td>−0.000</td>
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<tr>
<td></td>
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<td>(0.000)</td>
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<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
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<td></td>
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<td>[0.790]</td>
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<td></td>
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<td>(0.024)</td>
<td>(0.024)</td>
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<td>[0.018]</td>
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<tr>
<td>Firm turnover</td>
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<tr>
<td></td>
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<td>(0.032)</td>
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<td></td>
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<td>[0.932]</td>
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<td></td>
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<tr>
<td>R-squared</td>
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<td>0.152</td>
<td>0.147</td>
<td>0.139</td>
<td>0.163</td>
</tr>
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</table>

Two-tailed tests; Robust standard errors clustered by firm in parentheses; p-values in brackets; Independent and control variables mean centered prior to interacting.
positive and statistically significant ($\beta = 0.399$, $p = 0.026$), indicating empirical support for Hypothesis 1.

Model 3 tests Hypothesis 2, which predicts that a supplier firm’s Client-Specific Knowledge strengthens the relationship between Client Diversification and Firm Diversification found in Model 2. The coefficient of this interaction variable in Model 3 is positive and significant ($\beta = 8.807$, $p = 0.027$), thus corroborating Hypothesis 2. Similarly, Hypothesis 3 posits that Relational (Client) Commitment positively moderates the client-led diversification effect (H1), which is also corroborated by a positive and significant interaction coefficient ($\beta = 1.876$, $p = 0.049$). Taken together, H2...
and H3 lend credence to the theoretical proposition that relational assets play a role in strengthening client-led diversification. We graphically interpret H2 and H3 in Figures 3 and 4 (based on Model 6). Figure 3 shows that higher levels of Client-Specific Knowledge reduce the extent of supplier-firm diversification in general, but increase the propensity of suppliers to undertake client-led diversification. Figure 4 illustrates a similar relationship for Relational (Client) Commitment—while supplier-firm diversification generally increases with client diversification, the slope is higher when relational commitment is high (as opposed to low).

Model 5 presents our test of Hypothesis 4—the interaction between Client Diversification and Relative Demand Opportunity. However, we find no support for this hypothesis, indicating that greater demand opportunities in client markets relative to the supplier’s existing markets is not sufficient for suppliers to increase their tendency to undertake client-led diversification. Model 6 reports the full model with the full suite of hypotheses, and the results are consistent with the findings from the earlier models. In summary, our findings provide substantial support for client-led diversification and the influence of relational assets on this driver of supplier scope. In contrast with prior work (e.g., Wu, 2013), our findings regarding relative demand opportunities in client-market segments suggest that such opportunities in the abstract may not contribute to client-led diversification, thus underscoring a firm-specific rationale for demand-side theories of diversification.12

4.1 Additional analyses

We conducted a number of additional analyses to test the robustness of our results and to rule out alternative explanations for them. First, as relational capital is a shared resource between partner firms, we considered the possibility that diversification by suppliers may instead drive client diversification—that is, we examined the potential for reverse causality. We note that our fixed-effects model and use of lagged independent variables limits the possibility that client diversification may be caused by supplier diversification. In addition, we also conducted a Granger causality test (Granger, 1969), which did not support the proposition that supplier-firm diversification (using lagged values of up to 3 years) predicts or causes client diversification. Moreover, theoretically and practically, clients in our sample are making outsourcing decisions for the patent legal work related to technological inventions. It is highly unlikely that these clients would devise or change their innovation strategy (i.e., which technologies to invent) based on the horizontal scope of their legal suppliers.

Second, consistent with the relational view, our article examines how firm-level relational capital in supplier–client relationships induces supplier diversification. However, such relational capital may at least partially reside in the individual-level relationships between members of buyer and supplier firms (Kale et al., 2000), and thus they may be vulnerable to the movement or turnover of these individuals (Broschak, 2004; Somaya et al., 2008). If true, suppliers with higher turnover may be less likely to undertake client-led diversification due to the weakening of relational ties with existing clients. We assessed this proposition by splitting our main sample at the median level of supplier-employee turnover and estimating our models on the subsample with higher turnover. Our findings in this subsample are consistent with our main results in Table 3, with similar effect sizes and only slightly lower significance levels (which is expected in a smaller sample). Another concern stemming from individual-level relational capital is that supplier-client relationships may be localized within a particular unit of the client firm and may not easily transfer to other client units. Therefore, suppliers may be less likely to follow large diversified clients because their extant relational assets

12We also find no support for the hypothesis that absolute demand growth in client markets moderates client-led diversification.
cannot help them to access the new business opportunities. We evaluated this proposition by splitting our sample at the median of the Average Client Size variable, and rerunning our models on the subsample of larger average clients. Our findings in these models were again broadly consistent with our main results (similar effect sizes, slightly lower significance levels).

Third, while most law firms in our sample were specialist “patent boutiques” during our observation period, we nevertheless considered the possibility that more broadly diversified supplier firms may significantly account for our results. For example, suppliers who provide multiple legal services may have deeper financial resources or multiuse assets to draw from for diversification. To evaluate this possibility, we ran our models by excluding 12 suppliers that were listed in the annual National Law Journal surveys of the 250 largest, and typically highly diversified, U.S. corporate law firms. Excluding these firms made little material difference to our findings.

As noted earlier, we evaluated whether our findings are driven by the assigned cut-off of 10 patent attorneys (in 1990) by testing our hypotheses on supplier samples with cut-offs of 11, 12, and 13 attorneys. These analyses corroborated our reported results. We also explored a number of other control variables in our models, including a proxy for the law firm’s occupational expertise in patent law and the extent of outsourcing (versus internal execution of work) practiced on average by the firm’s clients. Further, research on corporate scope has noted that diversification often relies on slack firm resources that can be redeployed to other uses (Penrose, 1959; Sakhartov & Folta, 2014); therefore, we also controlled for a proxy measure of resource slack, calculated as the ratio of supplier patent attorneys to total patents worked on by that supplier (indicating the extent to which the firm’s attorneys have slack in their workloads). All of these additional analyses produced findings that were materially consistent with our reported results (similar coefficients and significance levels).

### 4.2 Limitations

Our findings are not, however, without limitations. Although the legal services industry is typical of knowledge-based services and our context provides rich fine-grained data to test our hypotheses, these findings may not generalize to other industry contexts. The research literature on a number of knowledge-based services such as advertising (e.g., Baker et al., 1998; Broschak, 2004; Rogan, 2014), investment banking (Baker, 1990), and auditing (Levinthal & Fichman, 1988; Seabright et al., 1992) attest to the importance of relational assets and their potential as a source of value added; however, more research is required into the potential drivers of client-led diversification in these contexts. Similarly, because our research focuses on specialized services within patent law, it is also unclear how well our findings may translate to diversification into highly disparate service areas or product domains, which may entail stronger organizational tradeoffs when servicing diverse needs of clients (Chatain & Zemsky, 2007). Thus, many research opportunities remain for an examination of client-led diversification across multiple industry domains.

Another potential limitation of our study related to our empirical context is the nature of patent legal services. Outsourced patent prosecution work consists of well-defined, narrow, short-run projects, in which clients’ main objective is to secure robust timely property rights over their inventions. Thus, the effects of suppliers’ decisions to follow their clients might be expected to be short-lived. Indeed, we did not find evidence that the client-led diversification effects endured over longer lags of 2 years and beyond. Moreover, patent law firms are able to expand into new areas with relatively small and incremental knowledge investments, especially when compared with diversification into capital- and scale-intensive product markets, where the initial investment tends to be more “lumpy.” Finally, patent prosecution work represents a “procedure” type of project on the spectrum
of project-types described in prior work on professional services (Maister, 1993; von Nordenflycht, 2010). In summary, our findings may not generalize to contexts that entail longer-term and more substantial projects, significant learning or investments in order to diversify, and other project types (e.g., experience-based or highly complex) in professional services, which also provide fertile opportunities for further research on client-led diversification.

Our research also measures key relational variables at the level of the firm (instead of the traditional dyadic level) by aggregating over the firm’s portfolio of clients. While this aggregation was necessary for our analysis of the determinants of diversification, which is inherently a firm-level phenomenon, it also raises concerns about the potential loss of finer-grained information at the project or dyadic level through such aggregation. We accept this loss in exchange for the overall firm-level insights that our research design generates, however, we also acknowledge the limitations for dyadic-level interpretation of our findings. Finally, it is possible that our empirical findings may be explained by omitted variables. Because we use fixed-effects panel models and find no evidence for reverse causality, these omitted variables can only potentially explain our results if within-firm changes in the omitted variables account for our (within-firm) main and moderation effects, which seems unlikely. Nonetheless, omitted variables constitute a potential limitation of our findings.

5 | DISCUSSION

In this article, we articulate a novel theoretical link between demand-side and relational advantage research and the horizontal scope of firms, which we employ to explain the phenomenon of client-led (or partner-led) diversification. Using a sample of patent law firms, we find significant empirical support for the proposition that these supplier firms expand their business scope—that is, diversify—when their existing clients diversify into more distant areas from the ones in which the supplier operates. We also find evidence that such client-led diversification is stronger in the presence of key supplier-side and client-side relational assets—client-specific knowledge and relational commitment—between the supplier and its portfolio of clients. Interestingly, we did not find support for our hypothesis that greater demand opportunities in client markets (relative to suppliers’ own markets) increases the propensity for client-led diversification. The nonfinding of a demand-opportunity moderation effect and the absence of a positive main effect for our relational asset variables are consistent with the notion that both elements of our theory—client-specific opportunities and relational capital—are important in explaining client-led diversification. Subject to the limitations noted in the previous section, our research has a number of implications for the research literatures on corporate strategy, demand-side strategy, and relational advantage, as well as informing scholarship and practice in professional services, which we discuss below.

In corporate strategy research, traditional resource-based explanations for diversification have been grounded in theories of synergistic resource sharing by firms across related lines of business to capture scope economies (Chatterjee & Wernerfelt, 1991; Levinthal & Wu, 2010; Teece, 1982), or in theories of redeployment of underutilized resources across business lines within the firm (Penrose, 1959; Sakhartov & Folta, 2014). Our research focuses attention on external, demand-side factors as a potential impetus for diversification (Ye et al., 2012; Zander & Zander, 2005), and in particular highlights the role of the firm’s existing client relationships in inducing such changes in corporate scope. Thus, a central contribution of the current article to the diversification literature is that a firm’s horizontal scope can be driven by its vertical relationships. Interestingly, our research contrasts with the recent research literature that examines organizational tradeoffs between the horizontal and vertical scope of the firm, and emphasizes the role of scarce managerial attention and
slack (Brahm, Parmigiani, & Tarijan, 2013; Rawley & Simcoe, 2010). Further investigation and integration of the mechanisms affecting horizontal scope in these streams of corporate strategy scholarship is an intriguing prospect for future research.

A related question that naturally arises from our research is whether and when client-led diversification improves firm performance, especially in light of recent studies that suggest that the costs of diversification may outweigh the benefits of economic synergies (Chatain & Mindruta, 2017; Siggelkow, 2003) and that firms may not be able to capture the anticipated level of additional business from existing customers (Nayyar, 1993; Schmidt et al., 2016). Thus the expansion of firms’ horizontal scope to leverage partner-specific relational assets potentially presents them with both opportunities and challenges. With regard to opportunity, firms may find that these relational assets enable them to enter successfully into new business areas even if they at first lack other resources and capabilities needed for those businesses (Zander & Zander, 2005). Additionally, such responsiveness to clients may help suppliers strengthen their relational capital with clients (Moen et al., 2013), and head off potential competition from other suppliers. Furthermore, the ability to leverage previously accumulated relational assets arguably reduces the costs and risks associated with such diversification. At the same time, horizontal expansion may strain firms’ corporate resources and managerial slack, and thus incur diseconomies of scope (Chatain & Mindruta, 2017). Moreover, firms may also risk becoming too closely tied to their clients, which may decrease their bargaining power and imperil their ability to develop and maintain specialized expertise and capabilities (Baker, 1990; Chatain & Zemsky, 2007). Future research may find it fruitful to investigate which of these two effects on firm performance dominate, and under what conditions. Moreover, these effects may vary systematically based on whether the relational assets and commitments are present on the side of the focal firm (supplier) or its partners (clients). Relatedly, it may be interesting to explore whether and when the changing scope of buyers’ needs drive more long-run, and thus (arguably) more strategic, changes in the scope of supplier firms.

Another question that our article leaves unanswered relates to the fact that the relational assets that explain the linkages between client and supplier diversification are bilateral. Therefore, it remains unclear which partner firm—supplier or buyer—will take the lead in diversification, and under what conditions. Just as we have made the case for client-led diversification in this article, in other empirical contexts, a case could also be made for supplier-led diversification. For example, consider the case of manufacturing suppliers (e.g., automobile companies) and their downstream buyers such as distributors (e.g., automobile dealerships), where it seems likely that supplier-led diversification might be commonly observed. Additionally, there may also be contexts in which partners share relational capital but are not strictly in a vertical relationship (e.g., some alliances), and may make mutually dependent changes in corporate scope. Thus, our article suggests fascinating opportunities for future research on partner-led diversification of different kinds, and on the conditions under which diversification may be supplier-led or buyer/client-led. The rationale we advanced for why diversification in our research context is client-led—clients being the partners with higher relative bargaining power and responsibility for delivering value to the end consumer—may also prove to be useful in these future explorations of partner-led diversification.

This article also contributes to research on the demand-side view by focusing attention on opportunities arising out of a firm’s existing customer relationships. Our research shows that these relationships with buyers of a firm’s offerings can be a source of customer-specific synergies (Schmidt et al., 2016; Ye et al., 2012; Zander & Zander, 2005), and allow the firm to access opportunities arising from such synergies. Importantly, while prior research has either asserted that customer-specific synergies are typically (supplier) firm-specific (Ye et al., 2012) or simply modeled them as
such (Schmidt et al., 2016), our research focus on partner-specific relational assets provides a theoretical and empirical illustration of such firm-specificity. Because relational capital is specialized to a particular transaction partner, the opportunities for scaling or redeploying these resources are also limited to that partner. To wit, only suppliers who have relationships and relational capital with diversifying clients have access to the resulting opportunities, which are therefore (supplier) firm-specific demand synergies that are likely to result in (client-led) diversification.

We also contribute to the research literature on the relational view, which has previously highlighted the impact of relational assets shared between exchange-partners (Dyer & Singh, 1998; Kale et al., 2000; Madhok & Tallman, 1998) on value creation and performance outcomes at the dyadic level (Chatain, 2011; Chatain & Mindruta, 2017; Dyer, 1996, 1997; Dyer & Chu, 2003; Wang et al., 2009; Zaheer et al., 1998). Our article extends this literature by going beyond the dyad to examine the firm-level impacts of relational assets across a firm’s portfolio of relationships (e.g., Lavie, 2007; Moeen et al., 2013), and assessing their implications for the corporate strategy—specifically diversification—of firms. Compared to dyad-level research on relational capital, the firm-level perspective is still in its infancy and there remain many research questions to explore regarding the development, use, and impacts of relational assets on firms. By linking relational assets with the demand-side opportunities (and potentially constraints) that they may create, we hope to spur a vibrant stream of research on relational capital at the firm level. In particular, future research can go beyond average firm-level values of relational variables, and leverage other distributional attributes of the firm’s portfolio of relationships to provide novel insights into the implications of relational assets for firm strategies and performance.

Another feature of the relational view related to levels of analysis is the long acknowledged role played by individuals in creating and sustaining relational capital between firms (e.g., Kale et al., 2000). In this article, we follow the predominant approach in the relational view by setting aside these individual-level mechanisms and focusing on relational assets at the firm level. Furthermore, as reported above, we found that our results continue to be supported for firms with high individual-level mobility. Nonetheless, there are important considerations and opportunities for future research that arise out of the individual-level foundations of some relational assets. First, if specific individuals control the firm’s most valuable client relationships they might wield a disproportionate influence on client-related strategies, including decisions to engage in client-led diversification, which might come at the expense of the firm as a whole. Second, to the extent that relational assets are tied to individuals, these resources may not be easy to scale or build slack in, and are therefore of limited use in extending client-specific advantages and may even constrain client-led diversification (Levinthal & Wu, 2010; Sakhartov & Folta, 2014). However, it is important to note that some relational assets may exist at the firm level (e.g., relational governance, interfirm routines, reputation as a partner), which may make them easily scalable and/or redeployable to support client-led diversification. Finally, the tension between relational assets controlled by individuals versus the firm also plays a role in the ability of mobile individuals to “port” relationships when they move (e.g., Raffiee, 2017; Somaya et al., 2008), thus making relational capital potentially vulnerable to turnover of key individuals. Thus, we foresee a number of avenues for exploration in which the balance between individual-level versus firm-level mechanisms that underpin relational assets are at play.

Finally, this article also makes contributions to research and managerial practice within the domain of professional services, which is increasingly becoming an important context for strategic management research (von Nordenflycht, 2010). For example, it sheds new light on the perspective that professional service firms might be better off finding ways to “farm” additional business from
existing clients than “hunting” for new clients (Maister, 1993). While our results are consistent with this idea, we also find that this effect is contingent on the strength of relational assets shared with clients. Moreover, we focus attention on the level of “relationalism” as an important firm-level strategic choice in professional services. While prior research has noted that professional service firms vary considerably in the degree to which they are relational or transactional with their clients (Baker, 1990; Broschak, 2015), the implications of these differences for other firm strategies and firm performance are yet to be systematically investigated. Our study thus opens the door to further research on the antecedents and consequences of relationalism in professional service firms.

In conclusion, it is our hope that the current article will spur a renaissance of research that explores the fertile intersection of demand-side strategy, the relational view, and corporate strategy. In the dynamic environment that many modern industries operate under, firms and managers need to actively consider how customer preferences and needs are changing, and adapt their own strategies, including diversification strategies, to these key environmental changes.

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