DISTANCE, DEVIATION FROM A TEMPLATE, AND PERFORMANCE:
INVESTIGATING A MODERATED MEDIATION MODEL

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While much prior research recommends an approach to knowledge transfer aimed at maximizing organizational fit with the environment, a growing stream of literature recognizes that tacit and ambiguous knowledge makes strict replication the preferred knowledge transfer method. Several studies have empirically shown that deviation from standardized routines significantly affects performance; some of these studies show positive effects and others negative. Since the fit between an organization and its environment deteriorates as it enters locations that are different from its home environment, a multiunit organization attempting to establish units overseas experiences dual pressures—both to fit local contexts (deviate) and to maintain internal consistency (not deviate). I construct a model that accounts for both pressures by incorporating distance and deviation from a template, and examining their performance effects. I explore how deviation mediates the distance-performance relationship as well as the direct and moderating influence of distance on the deviation-performance relationship in order to better understand the interplay of these forces and to help explain the conflicting pattern of results in prior research. Various conceptualizations of distance are utilized, including administrative, cultural, demographic, economic, financial, geographic, global connectedness, knowledge, and political distance. The effects are tested with an unbalanced panel data set of monthly deviation and performance indicators for international units of a large U.S.-based non-food franchisor in 26 countries over a period of approximately ten years.

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INTRODUCTION

Long-term prospects for firm success and competitive advantage have been tied to companies'

possession of valuable knowledge assets (Nelson & Winter, 1982; Teece et al., 1997; Zander &

Kogut, 1995) and the ability to transfer them internally from one organizational unit or entity to

another (Bartlett & Ghoshal, 1989; Eisenhardt & Martin, 2000; Kogut & Zander, 1992; Teece et

al., 1997; Zander & Kogut, 1995). These knowledge flows occur across distances, spanning

intervals in space, time, culture, institutions or economics that separate source from recipient.

Multiunit organizations transferring knowledge in the form of standardized organizational

routines (or templates) experience dual pressures (Bartlett & Ghoshal, 1989; Porter, 1986;

Prahalad & Doz, 1987)—one to copy routines as exactly as possible to preserve internal

consistency across units, and another to fit them to varying local conditions. Many prior

researchers have found that tailoring knowledge for contextual fit leads to better performance

(Argote & Ingram, 2000; Bartlett & Ghoshal, 1989; Kostova, 1999; Kostova & Roth, 2002; Luo,

2000; Morosini et al., 1998; Sorge, 1991); other studies show that performance benefits follow

efforts to replicate a template as exactly as possible (Jensen & Szulanski, 2007; Szulanski &

Jensen, 2006, 2008; Szulanski et al., 2000; Winter & Szulanski, 2001, 2002). Rather than focus

on one (pressure to deviate, or achieve contextual fit) or the other (pressure not to deviate, or to

replicate exactly), I study the interaction of both forces. My model examines cross-border

knowledge transfers with varying levels of distance (and of varying types) between source and

recipient, creating pressure to deviate from the replication template and impacting performance.

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By choosing to study a franchise context, I also ensure a high degree of pressure exists not to deviate from the template. The resulting study setting enables me to search out answers to the following research questions: how do distance and deviation from a template affect performance? How does deviation from a template mediate the performance effect of distance? Is deviation from a template more damaging to performance at lower levels of distance and less damaging where distances are higher? And how do these relationships differ among various conceptualizations of distance in the context of a franchised provider of services?

Scholars have pointed to the ability to globally leverage knowledge as the main reason for the existence of the modern multinational enterprise (MNE) (Kogut & Zander, 1992; Monteiro et al., 2008). One way in which firms leverage knowledge assets is through a process of exploration then exploitation (March, 1991) wherein a set of organizational practices or standardized routines is created and refined by trial and error experience (Winter & Szulanski, 2001). These routines, like any other asset, must be difficult for rivals to imitate in order to form the basis for sustained competitive advantage (Barney, 1991). However, that same difficulty in imitation by outsiders inhibits their successful transfer within the firm (Nelson & Winter, 1982). The term *template* has been used to refer to actual working instances or examples of organizational routines (Jensen & Szulanski, 2007; Nelson & Winter, 1982). A considerable stream of research has argued that firms that recreate and reuse organizational routines or templates developed in one locale in multiple other intra-firm locations are more likely to experience competitive advantage (Argote & Ingram, 2000; Jensen & Szulanski, 2007; Kostova, 1999; Rivkin, 2001; Szulanski & Jensen, 2006; Teece et al., 1997; Winter & Szulanski, 2001).

Within this knowledge transfer literature, pronounced theoretical and empirical differences have emerged. One branch bases its logic on institutional theory (Kostova, 1999; Kostova &

Zaheer, 1999; Scott, 2008) and international business (IB) theory (Bartlett & Ghoshal, 1989; Prahalad & Doz, 1987), suggesting that cross-border knowledge transfers involve environments that are quite foreign to most MNEs in terms of culture, language, business practices, and institutions, which makes entry into these markets more difficult (Ghemawat, 2001; Johanson & Vahlne, 1977; Khanna & Palepu, 1997). In the face of such market, institutional, cultural, or other pressures, existing organizational practices and knowledge should not be copied exactly but rather should be modified to fit the new setting (Argote & Ingram, 2000) thereby enhancing performance (Bartlett & Ghoshal, 1989; Kostova, 1999; Kostova & Roth, 2002; Luo, 2000; Morosini et al., 1998; Sorge, 1991).

A counterpoint to contextual fit arguments can be found in the knowledge transfer literature on replication (Jensen & Szulanski, 2007; Szulanski & Jensen, 2006, 2008; Szulanski et al., 2000; Winter & Szulanski, 2001, 2002). These researchers argue that organizational knowledge is tacit (Kogut & Zander, 1992; Nelson & Winter, 1982) and organizational routines are complex (Rivkin, 2000) and causally ambiguous (Lippman & Rumelt, 1982; Winter & Szulanski, 2002). As a result, firms may not understand which elements of an organizational routine are causal mechanisms related to high levels of firm performance. A set of practices works as a whole; deciding which components can be changed and which must remain unchanged can be problematic. Based on replication reasoning, the whole set of practices should be copied as exactly as possible to ensure success (Winter & Szulanski, 2001). This theoretical notion has been supported empirically in several studies (Jensen & Szulanski, 2007; Szulanski & Jensen, 2006, 2008; Szulanski et al., 2000) which conclude that modifying the set of practices—or deviating from the template—entails (at least partially) abandoning the original routine, raising implementation difficulty and lowering performance.

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In a body of research characterized by a pattern of both conflicting theoretical arguments and incompatible empirical results, investigating the influence of contextual factors is often advisable (Johns, 2006). In light of both theoretical and empirical disagreement, I examine the interplay of forces both in favor of, and against, deviation from a template. The pressure in favor of deviation from a template increases with local environmental differences. I therefore employ distance (in nine dimensions) as both an antecedent of deviation from a template as well as a moderator of the deviation – performance relationship. Previous researchers have built on a basic definition of distance as "the degree of separation between two points" (Evans & Mavondo, 2002: 517) to more specifically refer to levels of similarity or difference between home and foreign markets (e.g., Berry et al., 2010; Evans & Mavondo, 2002; Habib & Zurawicki, 2002; Johanson & Vahlne, 1977; Kogut & Singh, 1988; Tihanyi et al., 2005; Xu & Shenkar, 2002).

I propose and test a moderated mediation theory, which accounts for how deviation from a template mediates the relationship between distance and performance, as well as how distance moderates the relation of deviation to performance. Using a sample of overseas units of a U.S.-based franchisor offering mailbox, copying, shipping and other services to the small office/home office (SO/HO) market in 26 countries, I examine the direct, mediation, and moderation relationships between deviation from the franchise template, nine different types of distance (from the U.S.—where the template originated—to the franchisee's location), and performance.

The intended research contributions of this study include a fuller understanding of how distance and deviation from a template interrelate, and how they ultimately affect performance. Prior work has resulted in conflicting empirical evidence that supports both positive and negative performance impacts of distance and of deviation from standardized organizational routines. My dissertation is also a response to calls in the IB literature for a more discriminating approach to

understanding the impacts of distance (Nachum & Zaheer, 2005; Sousa & Bradley, 2008; Zaheer, Schomaker & Nachum, 2012). I aim to contribute to a better understanding of the circumstances under which deviation from (vs. strict replication of) organizational routines may be advisable in cross-border settings.

In the next section, I define distance (in various dimensions) and discuss its direct effect on performance. Then two characteristics of organizational knowledge that contribute to pressures to deviate and not to deviate are summarized, and hypotheses are formally stated regarding the role of distance as a driver of deviation as well as deviation's impact on performance. Further discussion of the mechanism driving the interrelations between distance, deviation and performance follows, along with hypotheses regarding the mediating role of deviation on the distance-performance relationship, and the moderating effect of distance on the deviation-performance relationship. Measurements and analytical methods are briefly discussed, and the results of the analyses are presented. A discussion of the findings and their implications concludes the paper.

THEORY DEVELOPMENT

This study subscribes to a view of multiunit organizations, such as MNEs or franchise

organizations, simultaneously affected by two forces: one pressure to fit with local

environmental conditions and another to maintain consistency within the organization

(Rosenzweig & Singh, 1991). This view of multiunit organizations, and especially the tension

between forces for local or national responsiveness (contextual fit) and intra-organizational

consistency, was made explicit by Porter (1986) and thereafter developed in several studies by

IB strategy scholars (e.g. Bartlett & Ghoshal, 1989; Prahalad & Doz, 1987). Figure 1 (see below)

depicts the interplay of these forces in a unique way. Distance, or differences between a

franchise's home and host environments, will impact the performance of franchise organization

subunits directly. I also utilize the distance construct as a proxy for isomorphic pressure, or
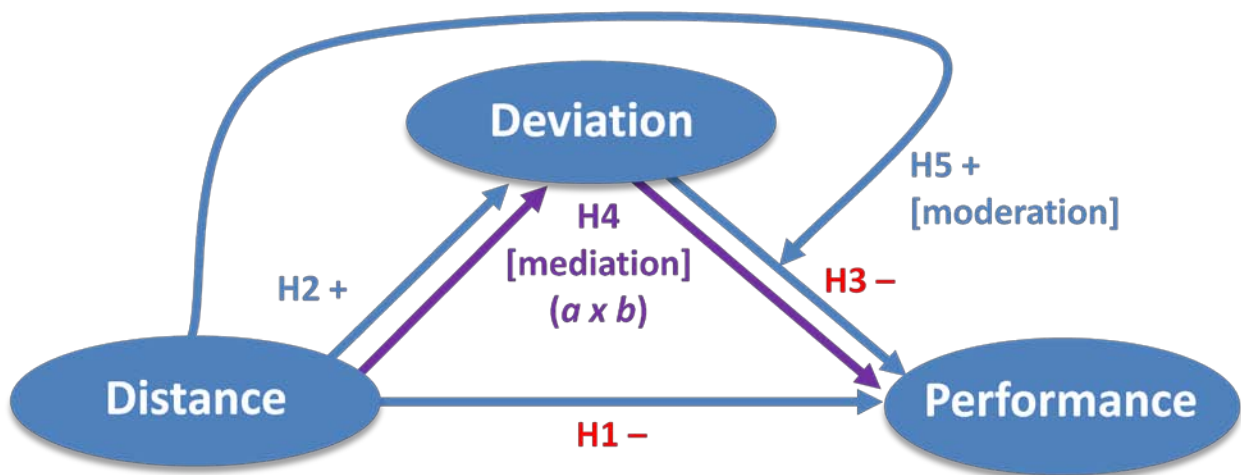
FIGURE 1 – THEORETICAL MODEL

pressure to fit with local environmental conditions. This study is conducted within the context of a franchise organization and its subunits in 26 countries, where it may be presumed that a relatively high level of pressure exists to replicate the routines, processes and practices (or the template) of the parent. This pressure not to deviate arises from the considerable investments of time and resources made by the franchise organization in developing and testing a template, the exact replication of which has been proven to result in positive performance outcomes. I therefore explore the performance effect of deviating from strictly copying the template established by the parent, under conditions that vary from low to high amounts of pressure to conform to local conditions (represented by low to high distance). The choice of a franchise setting for this study means that pressures to replicate exactly are relatively high, I am therefore examining how pressures to fit local conditions interplay with this high need for consistency within the organization, and how performance varies as a result of their complex interaction, which includes direct, mediation (indirect), and moderation (joint) effects of the two forces.

FOREIGNNESS, DISTANCE, AND PERFORMANCE

Origins of the Concept of Distance

Knowledge flows are costly by definition, with firms investing in technology and maintaining processes and organizational structures to foster and facilitate knowledge transfer (Bartlett & Ghoshal, 1989; Grant, 1996). When these flows or transfers are carried out between source and recipient environments that exhibit pronounced contextual differences—such as across national boundaries—even greater costs are introduced. These higher costs incumbent on firms overcoming greater distances have been studied in the IB literature since its very beginnings

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(Hymer, 1960/76). In his dissertation, Hymer developed the idea that foreign firms face costs of doing business abroad (CDBA) that are not experienced by local firms. Based on the notion of CDBA, Zaheer (1995) launched an important stream of research on the liability of foreignness (LOF) (e.g. Eden & Miller, 2004; Kostova & Roth, 2002; Kostova & Zaheer, 1999; Zaheer, 1995, 2002; Zaheer & Mosakowski, 1997), which over the past two decades has provided valuable insights into how dissimilarity between home and host countries may damage MNE subsidiary performance (Miller & Parkhe, 2002; Miller & Richards, 2002; Zaheer, 1995) and survival (Zaheer & Mosakowski, 1997).

Johanson and Vahlne introduced a key conceptualization of the various differences in local business environments that cause difficulties for firms—that of psychic distance, defined as "the sum of factors preventing the flow of information from and to the market" (1977: 24). They offered examples of the factors included in this multi-dimensional construct, such as differences in language, education, business practices, culture, and industrial development (Johanson & Vahlne, 1977: 24). These authors later connected such differences back to CDBA and LOF, stating simply: "The larger the psychic distance the larger is the liability of foreignness" (Johanson & Vahlne, 2009: 1412). Their observation that Swedish firms began their international expansion in psychically close countries before venturing into more distant ones became known as the Uppsala internationalization process model (Johanson & Wiedersheim-Paul, 1975; Welch & Luostarinen, 1988). While this school of thought placed cultural differences among several other important components of psychic distance, IB research over the subsequent decades would seemingly lose track of this fact. Differences between countries were summarized in a single cultural distance index by Kogut and Singh (1988), based on the dimensions of culture established by the highly influential work of Hofstede (1980). This Kogut

and Singh cultural distance index became a common operationalization of country differences that was used as a proxy for psychic distance and a key independent, moderator or mediator variable in many later empirical studies of phenomena such as internationalization, FDI sequence, entry mode choice, and MNE performance, which are central to IB research (Kirkman et al., 2006; Tihanyi et al., 2005; Zhao et al., 2004). Although not explicit in the Johanson and Vahlne (1977) definition, psychic distance has come to be understood by some scholars as differences between home and foreign countries as they are perceived by the mind of an individual (Hakanson & Ambos, 2010; Sousa & Bradley, 2008). While psychic distance relates closely to (and has often been equated with) cultural distance, psychic distance is used at the individual or micro level of analysis while culture is commonly conceptualized at the national or macro level.

Further Evolution of the Distance Concept

It is true that research in IB (and even in related fields of strategy and economics) has become quite reliant on distance constructs to signify similarity or difference between countries (Zaheer et al., 2012). Cultural distance in particular has been employed as a key variable by scholars in strategy, human resource management, and organizational behavior investigating questions ranging from innovation to performance to foreign direct investment (FDI) (Shenkar, 2001). Authoring a powerful critique of cultural distance, Shenkar argued persuasively against what he viewed as the cavalier application of a deeply flawed construct. His description of its "serious problems in conceptualization and measurement, from unsupported hidden assumptions to questionable methodological properties" (Shenkar, 2001: 519-520) pushed scholars to reevaluate its credibility and utility.

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In their recent commentary accompanying the recognition of Shenkar's 2001 article as the JIBS 2011 Decade Award winner, Zaheer and co-authors point out that despite the influence this critique has exerted on researchers, cultural distance remains in wide use, and the Kogut and Singh index is even more popular (i.e., more oft-cited) than before Shenkar's article was published. They attribute this ongoing usage not to reckless disregard of Shenkar's warning, but rather to the considerable usefulness of distance constructs—even when taking their limitations into account (Zaheer et al., 2012: 19).

Formerly, IB and strategy scholars used psychic distance (Johanson & Vahlne, 1977) and cultural distance (Kogut & Singh, 1988) measures to unidimensionally proxy for distance; researchers have more recently begun to operationalize distance as a multi-faceted construct. Ghemawat's CAGE framework (2001) is one well-known example of this, encompassing cultural (Hofstede, 1980; Kogut & Singh, 1988), administrative (La Porta, 1998; Whitley, 1992), geographic, and economic (Evans & Mavondo, 2002; Tsang & Yip, 2007) dimensions. Another multi-dimensional approach is that of institutional distance, comprised of regulatory, normative, and cognitive elements (Eden & Miller, 2004; Gaur & Lu, 2007; Kostova, 1999; Kostova & Zaheer, 1999). Extending the construct of psychic distance has also been the object of research that posits several determinants or components of psychic distance such as differences in language, education, industrial development, political system, religion, time zone, or colonial links (Brewer, 2007; Dow & Karunaratna, 2006; Hakanson & Ambos, 2010). Another recent study (Berry et al., 2010) ambitiously conceptualizes and measures distance along nine (mostly) time-varying dimensions (economic, financial, political, administrative, cultural, demographic, knowledge, global connectedness, and geographic) from an institutional perspective.

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In part as a response to prodding from fellow scholars (Shenkar, 2001), researchers have begun to move away from using singular distance measures that purport to stand for country differences in a "catch-all" fashion. It is understandable that one should desire to decomplexify knotty problems to allow for tractable solutions. However, reducing the dimensions of the relation under study by too much will result in the loss of nuance and meaning; this hazard is greatest for the broader distance constructs such as cultural, institutional and psychic distance (Zaheer et al., 2012). Zaheer, Schomaker and Nachum have called for distance researchers to avoid oversimplifying complex relationships, and suggested that lower-order distance constructs may offer superior investigative power relative to the higher-order distance constructs just mentioned (2012).

The approach taken by Berry and co-authors is an improvement over that of previous studies, which have tended towards measuring distance's effects in one-dimensional, time-invariant fashion, using methodologies that failed to consider scale differences and correlations between their component measures. Furthermore, the grounding of the Berry et al. (2010) analysis in institutional theories of national business systems (Whitley, 1992), national systems of governance (La Porta et al., 1998), and national innovation systems (Nelson & Rosenberg, 1993) addresses criticisms of prior distance research as evidencing a lack of sufficient theoretical foundation to justify the choice of a particular set of distance dimensions as the relevant ones to study. The Berry et al. (2010) study of cross-national distance in four foreign market entry contexts and my examination of franchise unit performance in a knowledge transfer context share an underlying institutional theory framework. I also desire to understand which distance dimensions are important performance factors, which ones drive deviation from exactly copying sets of organizational routines (or templates), and how the various dimensions may interplay—

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amplifying or attenuating each other's effects. I therefore hypothesize on the direct performance effects of each of nine dimensions of distance, following Berry, Guillén and Zhou (2010).

DIMENSIONS OF DISTANCE AND THEIR DIRECT EFFECT ON PERFORMANCE

Administrative Distance

Administrative distance reflects how heterogeneous two countries are with respect to language, religion, and bureaucratic patterns due to colonial ties and legal systems (Berry et al., 2010; Ghemawat, 2001; La Porta et al., 1998; Whitley, 1992). Language differences form barriers to effective communication and contribute to potentially costly misunderstandings (Evans & Mavondo, 2002). Sociologists hold that religion synthesizes national or societal meaning systems (Berger & Berger, 1978; Dodd & Seaman, 1998; Geertz, 1985). In a similar way as do differences of language, those of religion challenge communication and knowledge transfer efforts across borders, thereby dampening performance. Organizations from countries that share a colonial history (Ghemawat, 2001) or common legal system (La Porta et al., 1998) experience less administrative distance in the new environment, and greater institutional similarities mean an easier, less costly setting in which to do business. One may argue that differences in religion and language are more appropriately part of cultural distance, which was how they were organized by Ghemawat in his CAGE framework (2001). However, Ghemawat himself acknowledged an important, intrinsic difference between religious and language differences and those based on cultural norms and values—namely that the former were much easier to perceive and understand, and the latter far more subtle (2001: 142). This study follows the definition of administrative distance put forth by Berry, Guillen and Zhou (2010). These authors reason that

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administrative differences are distinct from those between cultures and political systems because they include formal and informal institutional arrangements and patterns that transcend national borders (Berry et al., 2010: 8). Their theoretical argument is backed up by empirical evidence that their measures of administrative distance (also used herein) are, in fact, not highly correlated with any of several measures of cultural distance, including those made popular by Hofstede (Berry et al., 2010: 11). Knowledge transfers that bridge greater administrative distance are thus likely to experience greater obstacles and higher costs of overcoming them. This intuition, along with the ability of firms to more accurately observe and interpret administrative (vs. e.g. cultural) similarities and differences supports the notion that greater administrative distance drives lower performance.

Cultural Distance

The importance of cultural distance has been well established, if not uncontroversial, ever since the work of Hofstede (1980) on culture was transformed in to a measure of distance by Kogut and Singh (1988). National culture is thought to shape the interpretations of messages and reality by a group of people that shares values, beliefs and assumptions, manifested in such things as attitudes toward authority, trust, individuality, and the relative importance attached to work and family (Hofstede, 1980). MNEs must shoulder the burden of adapting practices to fit with different cultural values (Schwartz, 1999) which contribute to differences in managerial cognition, decrease operational benefits by increasing training, monitoring and control costs (Tihanyi et al., 2005), and make entry and knowledge transfer more costly (Bartlett & Ghoshal, 1989).

Demographic Distance

Institutional theory also supports the importance of country differences in population size, growth, age structure, and other attributes (Berry et al., 2010; Whitley, 1992). Fundamental demographic characteristics of country populations may affect consumer behavior as well as market attractiveness to firms. Providers of goods or services targeted to young families, for example, may underperform in environments with lower birth rates. Likewise, firms in industries that cater more to older individuals will likely struggle in places where life expectancy is shorter and elderly populations are smaller. For a U.S.-based franchise providing services to small/home offices, it makes sense that taking its template to a new environment where small businesses are few and self-employment is limited could significantly curtail performance. More subtly, any template that relies on emphasizing some types of services over others may experience difficulty in a new setting where the target populations for those services are present in smaller numbers or concentrations.

Economic Distance

While some forms of distance have been studied extensively, researchers have asserted that economic distance, defined as the relative level of economic development of host vs. home country, has been largely ignored (Tsang & Yip, 2007). This type of distance reflects differences in consumption preferences, purchasing power, trade intensity, and overall macroeconomic stability, all of which impact performance (Berry et al., 2010). It is not difficult to envision complications and performance problems that would likely arise when taking a set of business practices and routines established in a more economically-developed country with high levels of

purchasing power and stability into a less well-developed economy where consumption patterns, incomes and inflation rates differ.

Financial Distance

Many countries have developed economically at different speeds, and over time have evolved distinctive financial systems that affect how firm operations get funded (Berry et al., 2010; La Porta et al., 1998; Whitley, 1992). Most financial differences between countries relate to the equity and credit markets that exist and the attendant availability or scarcity of external capital. In capital-intensive industries, large differences in access to funding from financial markets or creditors will seriously impact performance (La Porta et al., 1998).

Geographic Distance

Geographic distance is the most straightforward distance concept, since it is simply spatial separation. It is also the only dimension of distance not based on institutional differences. Previous studies show that geographic distance inhibits information exchange and interaction among focal units, as time zone differences and long transmission channels make knowledge transfer more costly and complex (Daft & Lengel, 1986; Cyert & March, 1992; Zaheer, 1995). In spite of technological efforts to make geographic distance irrelevant, it still influences the extent and the effectiveness of interactions between far-flung units. However, these effects will obviously be felt more strongly in industries where transportation and communication costs are more important. Within service industries such as the setting of this study, geographic distance is likely to have a much smaller impact, if any.

Global Connectedness Distance

This dimension is described in the institutional literature as differences in the ability of inhabitants of two countries to interact with, access information from, and diffuse their own activities to other parts of the world (Berry et al., 2010; Guillén & Suárez, 2005; Oxley & Yeung, 2001). Industries that rely on communication and information access from abroad (e.g. entertainment and news media, telecommunications, internet service providers) will be more affected by differences in global connectedness than industries where this kind of openness and interconnection is less important (e.g. raw materials, basic commodities). Firms' or individuals' ability to take part in globally connected activities may be reduced due to institutional causes such as tighter controls on information and/or freedoms of speech or the press, state ownership or lack of competition in telecommunications, or lower levels of economic and technological development (Guillén & Suárez, 2005). Global connectedness seems to relate closely to administrative, economic, and political distances, although prior research has shown it to be its own distinct dimension (Berry et al., 2010). As mentioned already, its effects will very likely be industry-sensitive; it will probably significantly impact firms providing shipping, copying, internet and other services to individuals and small businesses. As global connectedness differences become more pronounced, the firm (or franchisee in the current study setting) in a less connected environment may find that the template of services offered in the U.S. may simply not be feasible, or may be seriously damaged by generally low levels of network connections (e.g. telephones, fax machines, internet, etc.).

Knowledge Distance

Countries differ in their abilities to innovate and to create knowledge, as well as in their distribution of talent and creativity (Nelson & Rosenberg, 1993). In industries that rely more heavily on scientific activity and innovation (e.g. pharmaceuticals, aerospace, or other high tech industries), the performance impacts of such differences will be felt more keenly. A franchise business renting mailboxes and providing shipping and photocopying services does not seem to be a likely participant in high technology or scientific advancement of knowledge. However, any franchise business relies on individuals with some degree of entrepreneurial talent, creativity, and willingness to take risks. To the extent that patenting and other scientific activity can be a proxy for entrepreneurial capability or risk taking in a society—an idea which is certainly not without precedent in the literature (Goetz & Freshwater, 2001: 62; Kreft & Sobel, 2005: 598; Lee et al., 2004: 886)—knowledge distance should have a relationship to performance in the context of this study. Increasing knowledge distance (moving from a U.S. environment of relatively high scientific knowledge production and R&D activity to an environment with relatively less innovation) would imply that levels of entrepreneurial talent, creativity and risk taking necessary for success in operating a franchise business would be lower, causing performance to be negatively affected.

Political Distance

The final dimension of cross-national distance emphasized in the institutional literature relates to differences in the nature of political systems (Berry et al., 2010; Whitley, 1992), including governmental stability, democratic character (Dow & Karunaratna, 2006), size of government (relative to the economy), and membership in global and regional trade associations (Brewer,

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2007). Organizations which have enjoyed home country success in a relatively stable, highly

democratic political system, may attempt to replicate that success in home countries where

governmental commitment to a given structure of regulation, taxation, or property rights is more

easily and frequently subject to change. Such organizations will face increased political hazards

related to opportunistic behavior on the part of host country governments and competitors

(Henisz & Williamson, 1999). In most industries, one would expect political distance to

decrease performance, as firms crossing greater distances face greater liability of foreignness

(Johanson & Vahlne, 2009) which imposes performance-decreasing costs (Zaheer, 1995).

Hypothesis 1: *Distance[1] will relate negatively to performance.*

TENSION BETWEEN TWO FORCES

My model accounts for franchise organization subunits experiencing both pressure to conform or

fit with local conditions and pressure to maintain consistency across the organization by

replicating the franchise template as exactly as possible. Greater distance between a franchise's

point of origin and its subunits negatively impacts franchisee performance; this is so because

contextual differences imply decreased fit between organizational subunits and their environment.

Organizational knowledge has two fundamental aspects which guide much of the theoretical

trade-off between efforts to fit knowledge to new settings vs. copy exactly: context dependence

and causal ambiguity (Williams, 2007). These characteristics of organizational knowledge

contribute to dual pressures: to deviate and not to deviate.

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[1] Subhypotheses 1a to 1i cover nine distance dimensions: (1a) administrative, (1b) cultural, (1c) demographic, (1d) economic, (1e) financial, (1f) geographic, (1g) global connectedness, (1h) knowledge, and (1i) political.

Context Dependence Increases Pressure to Deviate

Knowledge is specific to a particular time and place, requiring modification to fit changes in those circumstances (Hayek, 1945; Nonaka & Takeuchi, 1995). Stripped of context, knowledge is merely information (Nonaka et al., 2000). Regarding organizational knowledge embedded in routines, Becker (2004) referred to Reynaud's (1998) idea that whatever rules and procedures are transferred across contexts must of necessity be general and not completely specified, missing some of their components, in order to be applied in a specific context. Rather than adhere strictly to exactly copying a template, or working example of an organizational routine, this literature emphasizes the fit between organizations and their environments (Argote & Ingram, 2000; Kostova, 1999), with pressure to deviate from templates arising from poor performance at the local level when contexts differ (Bartlett & Ghoshal, 1989; Kostova, 1999). Examples of basic contextual differences include: market structure and conditions (Prahalad & Doz, 1987), culture (Hannon et al., 1995), labor practices (Rosenzweig & Nohria, 1994), government regulations (Christmann, 2004; Kostova & Zaheer, 1999), and consumer tastes and preferences (Bartlett & Ghoshal, 1989; Cui & Liu, 2001).

Scholars have argued that since conditions vary across locations (or contexts), especially in cross-border settings, reliance on a standardized set of routines and procedures cannot result in optimal performance in any particular location. Moreover, due to the lack of perceived fit and to decreased motivation caused by the differences between the source and recipient environments, researchers have argued that exactly copying standardized practices results in decreased rates of implementation of the transferred routines (Kostova & Zaheer, 2002; Morosini, 1998) and lower rates of internalization (or institutionalization) of practices that do get implemented (Kostova & Zaheer, 2002). Routines fully implemented and internalized across contextual differences still

are characterized by some scholars as probable drivers of poor unit performance (Bartlett &

Ghoshal, 1989; Kaufmann & Eroglu, 1999; Rubin, 1978) and higher likelihood of failure (Sorge,

1991) or death (Hannan & Freeman, 1977) due to lack of fit. Thus, rather than copy routines

exactly firms should seek to maximize the fit between organizational practices and local

environmental conditions in order to improve local performance potential (Bartlett & Ghoshal,

1989; Kostova, 1999; Luo, 2000; Morosini et al., 1998; Sorge, 1991). Many scholars have

reasoned that some minimum amount of adaptation is necessary for long-term organizational

survival and performance (Kostova, 1999; Kostova & Zaheer, 2002; Lawrence & Lorsch, 1967;

Luo, 2001; Morosini et al., 1998; Prahalad & Doz, 1987; Samiee & Roth, 1992).

The basic contextual differences referred to above can also be thought of as distances

between environments—distances along a number of dimensions, including economic, financial,

political, cultural, and administrative, among others (e.g., Berry et al., 2010; Evans & Mavondo,

2002; Habib & Zurawicki, 2002; Johanson & Vahlne, 1977; Kogut & Singh, 1988; Tihanyi et al.,

2005; Xu & Shenkar, 2002). Following Berry et al. (2010), I recognize the need to disaggregate

the distance construct and adopt a more complex multidimensional view of its impacts.

Realizing that there are nearly infinite ways in which environments differ, theoretical guidance

as to which kinds of differences matter is key. Institutional theory-based perspectives on cross-

national distance (La Porta et al., 1998; Nelson & Rosenberg, 1993; Whitley, 1992) built upon

by Berry et al. (2010) make a valuable contribution to identifying the essential dimensions.

The nine types of distance outlined by Berry, Guillén and Zhou could be thought of as key

indicators of difference in national institutional environments, which heterogeneity relates to

increased isomorphic pressure and a higher need to modify practices to conform to local

legitimacy requirements (Rosenzweig & Singh, 1991). "It will be easier for an MNE to

understand and adjust to the legitimacy requirements of a country that is institutionally similar to

its home country than of one that is institutionally distant from the home country (e.g. a U.S.

MNE in Canada versus China)" (Kostova & Zaheer, 1999: 71-72). It seems therefore reasonable

to expect this relationship to hold, regardless of whether the particular institutions in question are

more specifically cultural, political, administrative, financial, economic, (etc.) in nature.

Accordingly, we may expect increased distance (administrative, cultural, demographic,

economic, financial, geographic, global connectedness, knowledge, and political) to result in

increased deviation from a template, as franchisees face greater difficulty in understanding and

successfully implementing the template in an environment that is dissimilar from where the

template originated, and will therefore be more likely to deviate from it. While keeping this

general expectation in mind, it is important to realize that each type of distance may not affect

deviation with the same intensity; the role of each type of distance is also likely to differ greatly

across industries.

    Hypothesis 2: *Distance[2] will positively affect the level of deviation from a template.*

Causal Ambiguity Discourages Deviation

Causal ambiguity is the lack of clear understanding "concerning the nature of the causal

connections between actions and results" (Lippman & Rumelt, 1982: 420), the "inability to

discern the causal structure that leads to…success or failure" (Mosakowski, 1997: 1), or a

reflection of "the recipient's depth of knowledge or irreducible uncertainty about cause-effect

relationships" (Szulanski, 1996: 36). While context dependence drives firms to deviate from

standardized routines in order to fit local circumstances (Williams, 2007), firms choose to copy a

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[2] Subhypotheses 2a to 2i cover nine distance dimensions: (2a) administrative, (2b) cultural, (2c) demographic, (2d) economic, (2e) financial, (2f) geographic, (2g) global connectedness, (2h) knowledge, and (2i) political.

set of practices exactly when faced with causal ambiguity (Winter & Szulanski, 2002). Strict

replication of a template is thus an important tool for transferring routines without having to

know precisely which subsets of them determine performance success.

In stark contrast to strategies based on environmental fit, copying exactly is often

conceptualized as the "McDonalds approach" wherein a number of similar outlets offer a nearly

identical set of products or services (Winter & Szulanski, 2001). Business format franchise

chains are more than just a fast-food phenomenon. Active in over 75 diverse industries, they

provide 15.3% of all private-sector jobs and 12.5% of all private-sector payrolls in the United

States, and their share of economic activity continues to grow (Association, 2008: 16).

Replicators are becoming a dominant organizational form (Winter & Szulanski, 2001), yet

conventional wisdom still holds that their success can be easily duplicated even in new contexts

by deviating from the template in the interest of environmental fit (Szulanski & Jensen, 2008),

reflecting a fundamental misunderstanding of how exact replication fuels performance.

Nelson and Winter offered a simple illustration of how deviations break the continuity of an

organizational routine, arising from the unexpected loss of an employee with highly important,

idiosyncratic knowledge (1982: 115). Hiring a new worker to fill the vacant role is very likely to

result in a 'mutation' of the routine, since he or she will probably be unable to duplicate the prior

role performance exactly without observing or being trained by the now-departed employee.

> *Mutations, of course, are not always deleterious….However, in functioning*
> *complex systems with many highly differentiated and tightly interdependent parts,*
> *it is highly unlikely that undirected change in a single part will have beneficial*
> *effects on the system; this, of course, is the basis for the biological proposition that*
> *mutations tend to be deleterious on the average (Nelson & Winter, 1982: 116).*

Put another way, such mutations—or deviations—can be problematic for maintaining the performance benefit of a set of routines and practices, since there is no way to be sure which changes to the 'recipe' might be beneficial and which might be disastrous.

Contrary to the arguments of the knowledge transfer literature focused on fit with local contexts, recent studies on replication place emphasis on fit with the organizational knowledge embedded in a template, or system of routines. This replication literature recognizes that organizational routines are often quite complex (Rivkin, 2000), made up of systems of subroutines (Macduffie, 1995) which may be interdependent (Siggelkow, 2001; Thompson, 1967) or complementary (Milgrom & Roberts, 1995). Since deviation from these sets of routines involves changes to one or more of its constituent parts, such modifications run an increasing risk of unforeseen negative interactions (Levinthal, 1997; Szulanski & Jensen, 2006) as more and more elements are altered at once.

Maladaptation may result not only from unexpected interaction effects of deviations from routines; it also may stem from difficulty in understanding local environments and how they interact with the routine to be replicated (Leonard-Barton, 1988; Szulanski & Jensen, 2006; Westney, 1987). Since the settings of the source and recipient inevitably differ, changes to the routines and to the environment will result, and "some of those changes are deliberate, some are unintended, and virtually all will have unforeseen consequences" (Westney, 1987: 6). Even locals misinterpret their own environment and fail to grasp its fit (or lack thereof) with a given routine.

A growing stream of empirical studies have found that deviations from the exact replication effort damage the organization's ability to utilize the original template as a reference for diagnosis and resolution of emergent implementation problems, thereby decreasing performance (Hoetker & Agarwal, 2007; Jensen & Szulanski, 2004, 2007; Winter & Szulanski, 2001).

Researchers therefore recommend sticking with a strategy of copying the original set of practices as closely as possible to increase the odds of success (Jensen & Szulanski, 2007; Szulanski & Jensen, 2006, 2008; Szulanski et al., 2000). My model presumes that causal ambiguity surrounds the linkages between action and performance in virtually any large firm (Lippman & Rumelt, 1982). Distance is included explicitly in the model, accounting for greater deviation as local environmental conditions diverge; in the absence of meaningful contextual differences, I expect the logic of exact replication and causal ambiguity to dominate. This means that deviating from the template will mar organizational performance.

Hypothesis 3: *Deviation from a template will negatively affect performance.*

THE MEDIATING ROLE OF DEVIATION FROM A TEMPLATE

In order to pursue a fuller understanding of how distance and deviation interrelate, and how they ultimately affect performance, I have explored the ways in which distance and deviation may each affect performance directly. I have also built on prior work that has shown that the institutional differences represented by the concept of distance drive organizations to deviate from existing organizational practices and knowledge, modifying them to fit new settings (Argote & Ingram, 2000; Bartlett & Ghoshal, 1989; Kostova, 1999; Kostova & Roth, 2002; Luo, 2000; Morosini et al., 1998; Sorge, 1991). In building support for a moderated mediation model, I next examine mediation itself.

The Distance Paradox

Although empirical evidence is quite mixed, much of the literature dating back to Johanson and Vahlne (1977) implicitly accepts the intuitively appealing notion that distance (psychic or otherwise) is *negatively* associated with performance. We are led to expect that organizations that come from home environments that are institutionally distant (politically, culturally, economically, etc.) from the host environment will experience fewer positive performance impacts than those originating closer (i.e. at lower levels of distance) to the host market. This is the logic I have used to undergird Hypothesis 1. However, there is also conceptual (O'Grady & Lane, 1996) and empirical (Evans & Mavondo, 2002; Evans et al., 2008; Morosini et al., 1998; Wang & Schaan, 2008) support for a distance paradox: the idea that distance *positively* impacts performance. The notion is that assumed or perceived similarities between home and foreign countries may create barriers to learning about new markets, since "learning begins with the ability to see differences" (O'Grady & Lane, 1996: 325). Secure in the belief that environments are similar, managers fail to notice the subtle but important differences that do exist, which has an adverse performance effect. Another argument in favor of a distance paradox contends that organizations likely perceive a higher level of risk when entering a distant market than a close one, which triggers strong desires to learn in order to reduce this uncertainty, ultimately improving organizational decisions and performance (Evans & Mavondo, 2002). What I am attempting to argue here is not that distance always has either negative or positive performance consequences. I assert that distance has a relationship with performance that depends on both direct and indirect channels.

The Contextual Fit Mechanism

Distance of various types affects performance not only directly, but indirectly as it creates pressure on firms to deviate from established organizational routines. I argue that deviation is an important factor in determining the ultimate realized effects of distance, and that it is likely to play a more significant role for some types of distance than others, depending on the specifics of a given industry. With increasing distance (along whichever dimension) from the U.S. to any given country where Mail Boxes Etc. (MBE) opens a franchise unit, greater differences exist between the two environments. The mechanism that explains *why* those differences drive increased deviation—which can be thought of as a widening gap between MBE's ideal product mix (or template) and the actual product mix realized by the franchise unit—is *contextual fit* (Argote & Ingram, 2000; Bresman, 2010; Kostova, 1999; Sorge, 1991). Greater difference in context drives more deviation as a better fit is sought between the template and the recipient environment (which is different from the origin or source environment of the template). This is so because better performance is associated with better fit. Now that we are armed with an understanding of *why* deviation should mediate the distance-performance relationship, we should naturally wonder *how* it does so, or in other words what form deviation causes the distance-performance relation to take. The form of the relationship between distance and performance is U-shaped. Low levels of distance do not elicit much deviation from the template, but as levels of distance increase, fit deteriorates, and performance decreases. Once a threshold is reached, distance becomes salient enough or significant enough that it triggers greater deviation in order to achieve better fit. At this inflection point, the performance effect turns positive.

For instance, MBE stores opened in environments at relatively low distance (i.e. more similar to the U.S.) are less likely to experience negative performance consequences. The fit between

the MBE template and the new context may not be perfect, but if distances are low then any performance impact is likely to be small. Such low distance may go unnoticed or unaddressed, particularly without dramatic negative performance consequences to underscore the lack of fit that actually exists. As we consider the same store opening at a somewhat greater distance (e.g. economic, administrative, demographic, etc.) from the U.S., problems of fit are even more likely. We may think of these problems of fit as costs of doing business abroad, examples of the liability of foreignness, or penalties for lack of local legitimacy. However we think of it, at greater distance the lack of fit increases, and the dampening effect on performance will become more readily apparent. At low levels of distance, unaddressed fit issues won't matter so much, but with more and more contextual differences in play, bad fit will drive performance downward. At some point (which is likely to vary by type of distance and by industry just to name two ways) lack of fit becomes a serious enough problem that its drag on performance causes managers to seek improved fit by deviating from the organizational template. So, contextual fit explains why deviation mediates the distance-performance relation, and the threshold effect determines the form of that relation (U-shaped). My general expectation is that deviation will be an important channel through which distance further impacts performance.

Hypothesis 4: *Deviation from a template will mediate the distance-performance relationship, which will exhibit a U-shaped form.*

THE JOINT EFFECT OF DISTANCE AND DEVIATION

Along with the direct and indirect effects of distance on performance, the model I construct includes the multiplicative, or moderator, effects of distance and deviation acting jointly to

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impact performance. I have hypothesized that the direct effects of distance on performance will be negative. I have further suggested that deviation is undertaken (at least partially) as a reaction to, and a remedy for, the negative impacts of distance on performance. Returning to the dual pressures on organizational subunits located abroad—that of intra-organizational consistency vs. that of fit with local environmental context—it is important to recognize that choosing to study units of a franchise organization effectively restricts the former pressure (not to deviate) to a relatively high condition. The latter pressure (to deviate) varies with the level of difference (distance) between the environment where the franchise template originates and the one where it is being replicated. Even holding the pressure not to deviate at a fairly high level, the pressure to deviate (which increases with distance) may eventually be sufficient to counterbalance it—perhaps even enough to overcome it. The more negative the performance consequences of distance become, the more appropriate I expect deviation from the template to become, and the more the negative performance effect of deviation will decrease. I therefore propose that the joint effects of deviation and distance will oppose in sign the main effect of distance. More deviation when distance is higher ameliorates negative impacts, while at lower distance levels more deviation will damage performance.

Hypothesis 5: *Distance[3] will positively moderate the deviation-performance relation.*

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[3] Subhypotheses 5a to 5i cover nine distance dimensions: (5a) administrative, (5b) cultural, (5c) demographic, (5d) economic, (5e) financial, (5f) geographic, (5g) global connectedness, (5h) knowledge, and (5i) political.

RESEARCH DESIGN

SAMPLE AND DATA

My sample is comprised of an unbalanced panel data set of monthly deviation and performance

indicators for units of U.S.-based Mail Boxes Etc. (MBE), one of the world's largest non-food

franchisors, located in 26 countries from November 1995 to December 2004 (see Tables 1 and 2).

> *MBE was founded in 1980 in San Diego, CA, in an effort to meet needs unfulfilled*
> *by the postal service. MBE specializes primarily in services for the Small Office*
> *and Home Office (SOHO) environments, including photocopying, color copying,*
> *packing and shipping, parcel and express courier, complete mailbox service,*
> *Internet access, and office and packing supplies (Szulanski & Jensen, 2008: 1735).*

Not at all a new player, MBE was an established franchise with a tested, proven template ready

for replication before the sample period commenced. This template took the form of a set of 12

products and services, with specific revenue percentage targets for each; it remained unchanged

throughout the ten years of the sample period. The MBE data set comprises monthly sales

revenue subject to royalty payments for each individual franchise location throughout 26

countries, as well as revenue data from each of the main four categories of the recommended

product mix: mailbox rentals, black and white copies, color copies, and shipping services.

As implied in the development of Hypothesis 3, causal ambiguity is an important

characteristic of the template or set of organizational routines being transferred by MBE from the

U.S. to its overseas franchisees. Justification for this assumption was offered by Szulanski and

Jensen (2006, 2008) via anecdotal data from their interviews with master licensees (MLs) of

MBE. Deviations from the template by newer MLs resulted in performance difficulties (2006: 953), which these authors attributed to a lack of understanding of "the underlying economic logic of the business" (2008: 1739). Meanwhile, a more experienced ML who had devoted years to strict replication of the template had gained a clearer understanding of its underlying logic and was able to deviate from it without destroying the reasons for its success (2008: 1739).

TABLE 1 – SAMPLE SUMMARY BY COUNTRY AND NUMBER OF STORE UNITS

Country	# of units	Country	# of units
New Zealand	8	Germany	22
Australia	37	Greece	14
Spain	80	Israel	17
Peru	6	Japan	29
Ecuador	1	Korea, South	5
Colombia	10	Lebanon	14
Austria	24	Norway	4
Belize	1	Philippines	4
Costa Rica	3	Poland	1
Panama	8	Portugal	16
Guatemala	1	Finland	1
Honduras	1	Sweden	14
France	14	United Kingdom	27
Total = 26 countries		Total # of units =	362

DEPENDENT VARIABLES

Performance

The dependent variable measures performance of the transferred routines at each local unit. Franchise organizations often use several performance metrics, the most crucial for the overall firm being sales revenue subject to royalty payments (STR). Since the primary revenue stream for

TABLE 2 – VARIABLES, DEFINITIONS, OPERATIONALIZATIONS AND SOURCES

Variable	Definition	Operationalization	Source(s)
Performance	Performance of transferred routines at the local unit level	Natural Log of sales revenue subject to royalty payments (Ln STR)	Mail Boxes Etc.
Deviation	Deviation from a template, or working example of a routine	Squared deviation from the recommended product mix	Mail Boxes Etc.
Administrative Distance	Differences in colonial ties, language, religion, and legal system	Colonizer-colonized link Common language (% population) Common religion (% population) Legal system	CIA Factbook CIA Factbook CIA Factbook La Porta et al., 1998
Cultural Distance	Differences in attitudes toward authority, trust, individuality, and importance of work and family	Power distance Uncertainty avoidance Individualism Masculinity	WVS, Hofstede WVS, Hofstede WVS, Hofstede WVS, Hofstede
Demographic Distance	Differences in demographic characteristics	Life expectancy at birth, total years Birth rate, crude (per 1000 people) Population ages 0-14 (% of total) Population ages 65 and above (% of total)	WDI WDI WDI WDI
Economic Distance	Differences in economic development and macroeconomic characteristics	Income – GDP per capita (2000 US$) Inflation – GDP deflator (% GDP) Exports of goods and services (% GDP) Imports of goods and services (% GDP)	WDI WDI WDI WDI
Financial Distance	Differences in financial sector development	Domestic credit to private sector (% GDP) Market cap of listed companies (% GDP) Number of listed companies (per 1 million pop)	WDI WDI WDI
Geographic Distance	Great circle distance between geographic center of countries	Great circle distance between two countries according to the coordinates of the geographic center of the countries	CIA Factbook

TABLE 2 (continued)

Global Connectedness Distance	Differences in tourism and internet use	Int'l tourism, expenditures (% GDP)	WDI
		Int'l tourism, receipts (% GDP)	WDI
		Internet users per 1000 people	WDI
Knowledge Distance	Differences in patents and scientific production	Number of patents per 1 million population	USPTO
		Number of scientific articles per 1 million pop.	WDI and ISI
Political Distance	Differences in political stability, democracy, and trade bloc membership	Political stability	POLCONV
		Democracy score	Freedom House
		Government consumption (% GDP)	WDI
		Membership in WTO	WTO
		Dyadic membership in same trade bloc	WTO

headquarters units is royalties, STR is emphasized over other measures of unit profitability. Franchises use observed levels of STR to match with appropriate levels of training, support, R&D, monitoring and advertising to benefit franchise units. Franchise headquarters also calculate overall profitability by summing STR from individual units (less central costs). Thus, franchises carefully measure and monitor STR to ensure franchisees do not understate revenues to avoid royalty payments. This makes an STR measure of performance even more appealing since outside audits of accounting reports are conducted by firms with little incentive to uncover understatements. Franchise-monitored STR is more likely to be an accurate representation of actual revenues from the performance of transferred routines. Since the focal franchise in this study provides services, the performance of routines transferred from franchise headquarters is the *only* source of firm revenues. As STR is bounded by zero and the highest values in the data are many times more than the lowest ones, the natural log of STR is my performance measure.

Deviation from the Template

I employ the squared deviation from a recommended product mix (Szulanski & Jensen, 2008) as a proxy for deviation from the template. Units in 26 countries report monthly deviation data: some for just four months (Greece), others for the entire 10-year period (Lebanon). By the start of the sample period, MBE had completed all experimentation and testing needed to form a template for replication. MBE gave new franchisees explicit training on its proven template: a specific mix of 12 official products/services offered to customers, with recommended revenue percentages ranging from 2% to 36%. The monthly data do not possess this degree of precision: the 12 services are aggregated into four categories.

A thoughtful observer might argue that the revenue percentages used herein to measure deviation may simply be the product of customer demand, which varies from one locale to another. Importantly, deviation from the recommended mix reflects changes made by franchisees to de-emphasize certain activities and routines given greater importance in the established template, in favor of others identified as less vital. Significant deviations may result in wholesale changes to the dynamics of the underlying business model. Prior research suggests that changes to the web of causal relationships that underlie standardized routines are likely to negatively affect performance (Jensen & Szulanski, 2007; Szulanski & Jensen, 2006). It is true that we cannot know exactly how much the realized revenue percentages reflect actions taken by MBE franchisees, versus how much they reflect demands placed on franchisees by their customers. However, I believe the deviation measured is to a considerable degree a product of franchisee choices related to advertising, store configuration, and cross-selling. MBE franchisees are given substantial latitude with regards to advertising within their local market. Unlike many franchises where all advertising is done by headquarters, MBE allows approximately half of advertising decisions to be made at the local level. Franchisees not only make decisions about which of their products and services will be emphasized via signage and other local promotion efforts, they also make choices regarding the placement of mailboxes, copy centers, etc. within the store itself. Store configuration choices influence customer decisions by directing attention towards certain profit centers over others. Managers of local MBE franchises also decide to what degree they will participate in cross-selling activities that are designed to encourage customers to purchase higher-margin products and services. While I certainly cannot claim to have data on all of these elements of franchisee action and choice to explicitly test, I do feel that these facts help to justify the assumption that deviation from the

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template as I have measured it is not just a passive phenomenon that results entirely from swings in customer demand. (To further address this concern, I have attempted to control for demand using GDP growth, which I will discuss further in a later section on control variables.)

The measure of deviation was calculated as the log of the Euclidean distance between the percentages of revenue generated by, and the product mix recommended for, each product or service category. Notably, the recommended product mix remained stable over the entire period of observation. The use of Euclidean distance to compute this measure means that it will be symmetric (i.e., a value could reflect deviation above or below the recommended value). This squares with my interest, not in directionality, but in variability with respect to the template.

INDEPENDENT VARIABLES

In an effort to bring researchers utilizing the distance construct and attempting to measure its dimensions into a greater degree of agreement on its appropriate and useful disaggregation as well as its measurement using more robust Mahalanobis (vs. Euclidean) techniques, Berry, Guillén and Zhou (2010) generate, test and graciously share nine measures of distance. As these authors explain in detail, Mahalanobis distances are superior to Euclidean in that they are not sensitive to differences in scale and they take into account typically high correlations and differences in variance between measures. Except where noted below for cultural distance, all of my measures for the nine dimensions of distance used as explanatory variables in this study were taken from the Berry et al. (2010) study[4].

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[4] I thank these authors for making these distance measures available for the use of all. I downloaded them by clicking on the link entitled "Download Longitudinal Cross-National Distance Data" on the following website: http://www.lauder.wharton.upenn.edu/ciber/research/faculty.php#

Administrative Distance

As already defined, administrative distance refers to differences in bureaucratic patterns due to colonial ties, language, religion, and legal system (Berry et al., 2010; Ghemawat, 2001; La Porta et al., 1998; Whitley, 1992). Links between colonizers and colonized, commonality of language, legal system and religion are all included as parts of this measure. Administrative distance is slow to change and is time-invariant in my sample.

Cultural Distance

The most popular measure of cultural distance was long that of Kogut and Singh (1988), a composite index based on Hofstede's (1980)/Hofstede and Bond's (1988) dimensions of culture (Power Distance, Uncertainty Avoidance, Individualism-Collectivism, Masculinity-Femininity, & Long Term Orientation). Owing to mixed empirical support, other measures have emerged as alternatives, including that of the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project (House et al., 2004). Berry et al. (2010) create their measure of cultural distance using data from four waves of the World Values Survey (WVS; Inglehart, 2004). They constructed their measures to mimic Hofstede's dimensions of uncertainty avoidance, power distance, individualism, and masculinity. Since scholars have found that cultural values evolve rather quickly over time (Inglehart & Baker, 2000), the WVS data strives to capture such changes at 3- or 4-year intervals. The WVS-based cultural distance measure is calculated using interpolated data for the years between waves of the survey. Since the Berry et al. (2010) WVS-based cultural distance measure is unavailable for many of the countries in my sample I calculated an alternative measure. I favored using the GLOBE measures, but was unable to gain access to them. Instead, I have calculated both Mahalanobis (based on methods outlined by

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Berry et al., 2010) and Euclidean measures (based on what has become the standard approach of Kogut and Singh, 1988) of cultural distance using Hofstede's cultural dimensions data as generously made available on his personal website[5]. As Hofstede's cultural dimensions are time-invariant, so are my resultant cultural distance measures.

Demographic Distance

The ways in which one country differs from another according to population size, growth, age structure, and other qualities relate directly to the attractiveness and growth potential of its markets (Berry et al., 2010). This distance measurement includes differences in life expectancy rates, birth rates, and the age structure of the population (percentage under 14 and over 65), interpolated for years in which birth and life expectancy rates are not available (i.e. since most countries conduct population censuses infrequently).

Economic Distance

Countries differ by their income level, inflation rates, and trade as a proportion of GDP. According to Berry et al. (2010) these indicators are important, because they correlate with purchasing power, consumer preferences, macroeconomic stability, and openness of the economy to outside influences. I follow Berry et al. (2010), taking an index of four Mahalanobis distances between home and host country: (1) Income - GDP per capita; (2) Inflation – GDP deflator; (3) Exports; and (4) Imports – both as a percentage of GDP.

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[5] http://www.geerthofstede.nl/dimension-data-matrix

Financial Distance

Differences in financial systems are captured by including in my analysis the market capitalization of listed companies, the number of listed companies, and the amount of private credit available (all as a percentage of GDP).

Geographic Distance

The spatial gap between locations does impact trade and other economic activity by increasing transportation and communication costs. I adopt the approach of Berry et al. (2010) in using the great circle distance between the latitude and longitude of the geographic center of each country as given by the CIA World Factbook.

Global Connectedness Distance

As the name implies, this measure focuses on differences in information access and opportunities to interact with other parts of the world. This dimension is captured using measures of international tourism expenditures and receipts (each as a percentage of GDP), and Internet users (as a percentage of the population).

Knowledge Distance

Country differences also exist in talent, creativity, innovation, and the capacity to create knowledge. Following the literature on national innovation systems, the measure of knowledge distance is calculated using the number of patents and the per capita number of scientific articles (Berry et al., 2010; Nelson & Rosenberg, 1993).

Political Distance

Differences between political environments are characterized along continuous political dimensions, such as institutional checks and balances (e.g., Dow & Karunaratna, 2006), democratic character, the size of the state relative to the economy, and external trade associations (Brewer, 2007).

Moderators

Interaction terms (distance times deviation) are used to test for moderation.

Indices

In addition to the explanatory variables listed and explained in this section, I calculated two different indices of institutional distance. In order to more completely test the unidimensionality vs. multidimensionality of the distance construct, all nine dimensions of institutional distance taken from Berry et al. (2010) were standardized by country and year and averaged.

Distance index (DI). This index of the nine distance dimensions was calculated using a simple equally weighted average of the standardized values.

Weighted distance index (WDI). A factor analysis was performed in Stata in order to obtain appropriate weights for the various distance dimensions. Since my data was incomplete, it was necessary to follow the procedure outlined by UCLA (2011) and Truxillo (2005) for maximum likelihood estimation of the covariance matrix, factor analysis, and orthogonal varimax factor rotation. The result was that only three dimensions of distance—cultural, demographic and economic—loaded on a common factor, with the other six remaining distinct. Thus, the factor

loadings were used as weights in combining these three distance types into a single factor, which was then averaged with the other six dimensions.

CONTROL VARIABLES

Past Performance

In order to combat endogeneity arising from causality potentially flowing from performance to deviation instead of the other way around, I include a measure of past performance as a control. Including performance from the previous period in all of my regressions allows me to rule out poor past performance as a driver of current period deviation from the template and focus on the effects of the explanatory variables of interest. As a robustness check, I ran the analyses at varying lags of performance, including two, three, four, five, six, and twelve month performance lags. These results are not shown in the tables that follow, having been omitted for reasons of brevity and simplicity, but there were no appreciable impacts to patterns of sign and significance in the results presented here.

Age

Unit age was measured as the number of days since the unit opening (time-varying by month). It was included as a control since age can affect the propensity to deviate from the template. Due to maturation issues (e.g. local learning, brand awareness), age can potentially vary the effect of deviation on performance, with more experience utilizing organizational routines and copying the template possibly affecting unit managers' ability to deviate from it with less damage to performance.

Growth

As mentioned in the section on the deviation variable, controlling for growth was desirable in order to try to rule out customer demand fluctuations as an alternative explanation for both performance and deviation results. I used the World Bank's WDI indicator of GDP growth, expressed as an annual percentage based on constant 2000 U.S. dollars.

Time Effects

Year dummy variables were used to control for macro environmental shocks and time trends that might affect performance. Month dummy variables were also used to account for possible seasonal variation.

ANALYSIS AND RESULTS

Hypotheses are tested using the Baltagi-Wu (1999) panel data estimator (Stata command ***xtregar, re***), which allows for modeling unbalanced panel data with an auto-regressive structure, which—according to the Wooldridge test for first-order autocorrelation in panel data (***xtserial***)— this data exhibits. The GLS estimator of the random effects model is preferred since the within estimator of the fixed effects model does not allow for non-time-varying predictors, of which I have several. The specification is:

$$Y_{it} = \alpha + X_{it}\beta + \nu i + \varepsilon_{it}$$
$$\varepsilon_{it} = \rho\varepsilon_{i,t-1} + \eta_{it}$$

where *X* is a vector of control and predictor variables and

$$i = 1, \ldots, N; \ t = 1, \ldots, T_i; \ |\rho| < 1, \ \eta_{it} \sim iid(0, \sigma^2_\eta), \text{ and } \nu_i \sim iid(0, \sigma^2_\nu).$$

VIF scores above 10 typically cause researchers to worry about the detrimental effects of multicollinearity in a regression analysis that includes interactions and squared terms. My initial set of models (1-12, Table 4) has only linear terms and no interactions, and the VIFs are low (averaging 2.44). However, later models have linear and squared terms (Table 7) and interactions as well (Table 9), resulting in high VIFs of 100.24 and 699.82, respectively. While mean centering variables lowers these significantly (to 10.27 and 32.88), the aforementioned heuristic would still indicate likely problems. In fact, the presence of high VIFs need not be cause for alarm since multicollinearity does not bias coefficient estimates. It does inflate standard errors, only making it more difficult to find significance in models with large VIFs.

TABLE 3 – CORRELATIONS AND DESCRIPTIVE STATISTICS

		1	2	3	4	5	6	7	8
1	Performance	1.00							
2	Deviation	-0.02$^+$	1.00						
3	Admin	0.18**	0.09**	1.00					
4	Cult	-0.05*	-0.15**	0.40**	1.00				
5	Cult_Eu	0.05**	0.04**	0.38**	0.73**	1.00			
6	Cult_Mh	0.05**	-0.02$^+$	0.45**	0.89**	0.79**	1.00		
7	Demo	0.10**	-0.00	0.29**	0.68**	0.70**	0.55**	1.00	
8	Econ	-0.23**	-0.05**	-0.32**	0.22**	0.37**	0.24**	0.39**	1.00
9	Fin	-0.03**	0.04**	0.16**	-0.30**	-0.07**	0.11**	0.06**	0.36**
10	Geog	0.15**	-0.06**	0.19**	0.33**	-0.01	0.19**	0.28**	-0.15**
11	Glbl	-0.09**	-0.05**	0.03**	0.29**	0.03*	-0.03**	0.24**	0.37**
12	Knwlg	-0.35**	-0.12**	-0.61**	-0.21**	-0.48**	-0.36**	-0.50**	0.44**
13	Polit	0.20**	-0.00	0.32**	0.45**	0.45**	0.41**	0.47**	0.01
14	L.ln_str	0.88**	0.02$^+$	0.20**	-0.04*	0.07**	0.05**	0.11**	-0.23**
15	Age	0.31**	-0.03*	-0.17**	-0.08**	-0.07**	-0.09**	-0.03**	0.05**
16	Growth	-0.10**	0.01	-0.10**	-0.08**	-0.15**	-0.20**	-0.05**	0.12**
	Obs	7332	6966	7332	3620	7263	7263	7332	7332
	Mean	8.88	.114	127.6	12.5	1.71	2.79	2.82	8.76
	Std. Dev.	.969	.192	66.7	5.32	1.07	.975	1.89	6.72
	Min	3.73	.0006	51.8	2.16	.022	.428	.070	.124
	Max	12.93	13.01	248.5	24.05	5.07	4.98	7.97	31.46

		9	10	11	12	13	14	15	16
9	Fin	1.00							
10	Geog	0.05**	1.00						
11	Glbl	0.11**	-0.05**	1.00					
12	Knwlg	0.14**	-0.38**	0.16**	1.00				
13	Polit	-0.11**	0.10**	0.14**	-0.49**	1.00			
14	L.ln_str	-0.03**	0.16**	-0.09**	-0.37**	0.22**	1.00		
15	Age	-0.08**	-0.17**	0.13**	0.19**	0.01	0.32**	1.00	
16	Growth	0.25**	-0.24**	0.10**	0.30**	-0.11**	-0.09**	0.05**	1.00
	Obs	7201	7332	7021	7020	7191	6808	7332	7332
	Mean	4.92	9390	3.53	28.44	1609	8.89	712	3.13
	Std. Dev.	2.83	2336	6.35	11.33	1402	.962	587	2.03
	Min	1.62	2456	.183	.892	204.1	3.73	-335	-6.30
	Max	13.98	15244	51.78	39.84	6906	12.93	3044	9.32

** $p < 0.01$; * $p < 0.05$; $^+$ $p < 0.1$

The cure-all remedy often recommended for the malaise of multicollinearity—mean centering—has recently been debunked as a myth (Echambadi & Hess, 2007). I therefore avoid centering the interaction terms and conservatively report all of the models without centering. An alternative tonic sometimes prescribed for multicollinearity is to drop the offending variables. Since the interaction and squared terms in my model are all theoretically relevant and the subject of hypotheses, dropping them would likely bring omitted variable bias. In this case the cures proposed for high VIFs may be worse than the disease of multicollinearity itself.

Basic descriptive statistics and pairwise correlations are reported in Table 3. Apart from the expected high correlations among alternative measures of cultural distance and between performance and its lagged value, the coefficients shown give no cause for concern.

Table 4 displays results for Models 1 through 9, with estimates of the relationships between the nine dimensions of distance and performance. Hypotheses 1a to 1i conveyed my expectation that the dimensions of distance would have a negative relationship with performance. To test these hypotheses, regressions of performance on each successive distance type were completed. Model 10 of Table 4 shows the results for the full model, including all nine distance dimensions. Interestingly, the coefficients on all but economic and geographic distance are inconsistent with the regression results done individually in Models 1-9 either in sign, significance, or both. The Model 10 results show the hypothesized negative sign on administrative and economic distance, but a positive one for cultural, demographic, financial, and geographic distance, with coefficients on global connectedness, knowledge and political distance that lacked statistical significance. Meanwhile, the individual regressions in Models 1-9 show the hypothesized negative sign was supported for cultural (H1b, Model 2), economic (H1d, Model 4), financial (H1e, Model 5), global connectedness (H1g, Model 7), and knowledge (H1h, Model 8) distances – five out of the

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TABLE 4 – PANEL DATA REGRESSIONS TESTING HYPOTHESIS 1: DISTANCE – PERFORMANCE

DV=Performance Model #:		H1a 1	H1b 2	H1c 3	H1d 4	H1e 5	H1f 6	H1g 7	H1h 8	H1i 9	H1 10
Administrative		.0004**									-.0011**
Cultural(Mh)			-.029**								.0335[+]
Demographic				.0040							.0395**
Economic					-.016**						-.0446**
Financial						-.0072*					.0299**
Geographic							2e-5**				2.4e-5**
Global Conn.								-.007**			.0024
Knowledge									-.012**		-.0021
Political										4e-5**	-9.9e-6
Lagged Perf.	.6524**	.6458**	.6549**	.6531**	.6333**	.6532**	.6446**	.6499**	.6161**	.6632**	.5926**
Age	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0002**
Growth	-.016**	-.016**	-.017**	-.016**	-.011**	-.015**	-.012**	-.020**	-.007[+]	-.015**	-.0047
Obs	6808	6808	6743	6808	6808	6687	6808	6514	6525	6673	6111
Locations	352	352	350	352	352	348	352	347	340	346	329
R^2: Within	.4501	.4507	.4499	.4501	.4524	.4487	.4510	.4473	.4440	.4558	.4541
R^2: Between	.9254	.9207	.9290	.9251	.9230	.9257	.9217	.9274	.9070	.9245	.9129
R^2: Overall	.7960	.7962	.7974	.7959	.7966	.7964	.7955	.7970	.7960	.8005	.8065

DV=Performance Model #:	H1 11	H1 12
DI	-.1407**	
WDI		-.1071**
Lagged Perf.	.6530**	.6532**
Age	.0001**	.0001**
Growth	-.0118**	-.0121**
Obs	6808	6808
Locations	352	352
R^2: Within	.4499	.4498
R^2: Between	.9297	.9294
R^2: Overall	.7969	.7967

** $p < 0.01$; * $p < 0.05$; [+] $p < 0.1$; all two-tailed test; All regressions include year and month dummies (results omitted for brevity).

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nine dimensions. For administrative (H1a, Model 1), geographic (H1f, Model 6), and political (H1i, Model 9) distance the coefficients were positive in sign. Although a significant positive relationship is found instead of negative, the very small magnitude of these coefficients (even when compared to relatively small magnitudes on the rest of the coefficients of distance dimensions) seems to bear out that the practical impact of administrative, geographic and political distance in the context of a service franchise was very close to zero. The coefficient on demographic distance (H1c, Model 3) was statistically indistinguishable from zero. Models 11 and 12 of Table 4 display results for the unweighted and weighted distance indices (DI and WDI, respectively), which both bear out that the individual measures taken together conform with the hypothesized negative performance effect in a statistically significant manner. While the general expectation of negative sign on distance is not uniformly observed across all individual distance types, I interpret the results in Table 4 as overall offering support for H1.

In Table 5, Model 22 displays estimates for a regression including the full model. These results show that the hypothesized positive sign is evidenced for administrative, financial, and political distance, but a negative sign appears for demographic, geographic, and knowledge distance variables. Coefficients on cultural, economic, and global connectedness distance were statistically indistinguishable from zero. Models 13 through 21 show estimates for the various tests of hypotheses 2a through 2i, wherein the nine dimensions of distance were expected to relate positively to deviation. Models 13, 14 and 21 show support for hypotheses 2a, 2b, and 2i – that administrative, cultural, and political distance each significantly and positively impact deviation from the template. Models 15, 17 and 19 show estimates for demographic, financial and global connectedness distance, none of which were statistically different from zero. Hypotheses 2c, 2e, and 2g were therefore not supported. Models 16, 18, and 20 reflect a lack of

TABLE 5 – PANEL DATA REGRESSIONS TESTING HYPOTHESIS 2: DISTANCE – DEVIATION

DV=Deviation / Model #:	H2a 13	H2b 14	H2c 15	H2d 16	H2e 17	H2f 18	H2g 19	H2h 20	H2i 21	H2 22	H2 23	H2 24
Administrative	.0004** (.0001)									.0001[+] (7e-5)	IV = Distance Index (DI)	IV = Weighted Distance Index (WDI)
Cultural(Mh)		.0127* (.0060)								-.0063 (.0056)		
Demographic			.0019 (.0029)							-.0051[+] (.0029)		
Economic				-.0020* (.0008)						-.0014 (.0013)		
Financial					.0003 (.0017)					.0032** (.0012)		
Geographic						-4e-6[+] (2e-6)				-6e-6** (1e-6)	-.0011 (.0156)	-.0002 (.0132)
Global Conn.							-.0012 (.0008)			.0005 (.0005)		
Knowledge								-.0040** (.0006)		-.003** (.0006)		
Political									.00001* (4e-6)	1.4e-5* (6e-6)		
Lagged Perf.	-.0050	-.0078[+]	-.0050	-.0051	-.0069[+]	-.0049	-.0039	-.0044	-.0124**	-.0027	-.0043*	-.0050	-.0050
Age	5e-6	.00001[+]	.00001	.00001	.00001	.00001	2e-6	.00001	.00002**	.00001**	.00002**	5e-6	5e-6
Growth	.0029	.00308	.00295	.00286	.00379[+]	.00278	.00200	.00357	.00787**	.00019	.02150	.0030	.0029
Obs	6483	6483	6418	6483	6483	6363	6483	6221	6203	6348	5821	6483	6483
Locations	350	350	348	350	350	346	350	345	338	344	327	350	350
R²: Within	.0040	.0043	.0037	.0039	.0047	.0043	.0034	.0050	.0060	.0079	.0095	.0041	.0040
R²: Between	.0597	.1514	.0721	.0607	.0748	.0626	.0846	.0613	.1814	.1312	.3873	.0595	.0597
R²: Overall	.0081	.0224	.0100	.0087	.0104	.0084	.0125	.0104	.0367	.0336	.1895	.0081	.0081

** p < 0.01; * p < 0.05; [+] p < 0.1; all two-tailed tests. Standard errors are shown in parentheses.
All regressions include year and month dummies (results omitted for brevity).

support for hypotheses 2d, 2f, and 2h in that economic, geographic, and knowledge distance did

significantly impact deviation, but with a negative sign, contrary to the hypotheses. Again, a

regression including the full model was undertaken (Model 22) along with regressions of

deviation on the two distance indices (Models 23 and 24). The lack of statistical significance in

the latter two models points to the fact that opposing signs on the impact of various dimensions

of distance to deviation from the template tends to make those effects undetectable when taken

together. Overall, there is only partial support for Hypothesis 2: that is, the hypothesized

positive impact of distance on deviation is only supported for some dimensions (namely,

administrative, financial and political) and not others.

In Table 6, the estimates are shown for my test of hypothesis 3, that deviation will impact

performance negatively. H3 is strongly supported, with the coefficient of deviation having a

negative sign and high level of significance.

TABLE 6 – PANEL DATA REGRESSION TESTING
HYPOTHESIS 3: DEVIATION – PERFORMANCE

DV=Performance		H3
Model #:		25
Deviation		**-.184****
Lagged Perf.	.6524**	.6382**
Age	.0001**	.0001**
Growth	-.0162**	-.0176**
Obs	6808	6483
Locations	352	350
R^2: Within	.4501	.4534
R^2: Between	.9254	.9265
R^2: Overall	.7960	.7966

** $p < 0.01$; * $p < 0.05$; [+] $p < 0.1$;
all two-tailed test; Regression includes year and
month dummies (results omitted for brevity).

The investigation of one of the main hypotheses (H4) of this study requires us to follow the classic mediation analysis steps outlined by Baron and Kenny (1986) and further clarified by Zhao, Lynch and Chen (2010). A classic mediation relationship is diagrammed in Figure 2 (see below).
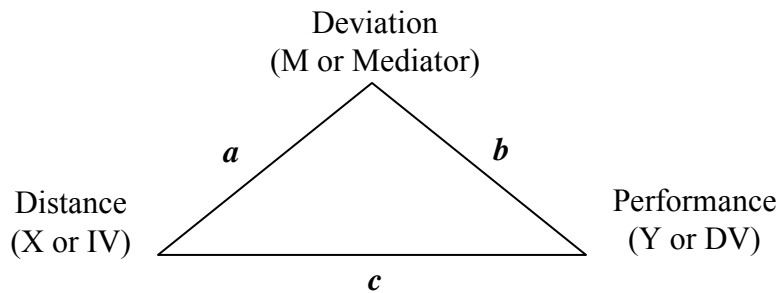

FIGURE 2 – CLASSIC MEDIATION RELATIONSHIP

My investigation of deviation mediating the distance-performance relationship (H4) begins with estimation of *a*, which actually took place in my test of H2 (reported in Table 5) with regressions of deviation on the various dimensions of distance. Then the estimates of *b* and *c* can be obtained from regressions of performance on deviation, distance, and controls (reported in Table 7). Due to the hypothesized form of the relation between distance and performance being U-shaped in the presence of the mediator (deviation), squared distance terms were included in all of the models shown in Table 7. In most of the regression results involving individual distance types, a negative sign on the linear distance term and a positive sign on the squared term support the expected U-shaped relation. This result also holds for both the DI and WDI results in Models 36 and 37. Only geographic distance (Model 31) and political distance (Model 34) do not conform to the pattern; geographic distance appears to exhibit an inverted U shape and political distance a positive, linear performance effect. The results in Table 7 also show a consistently

highly significant impact of deviation on performance in the presence of different types of distance. In eight out of nine cases (the one exception being political distance, Model 34) the performance impact of deviation was negative and highly significant. The effects of the various types of distance on performance remained largely consistent with the results for hypothesis 1 as reported in Table 4 (Models 1-9); in fact the regressions including squared distances and deviation as explanatory variables (Table 7) are virtually identical in sign and statistical significance to regression results obtained without deviation (Table 4), with the sign on administrative distance and the significance of demographic distance being the sole exceptions. Some mediation analyses would end right here, claiming that since no evidence of a change in significance in the direct (*c*) relationship was present, no mediation occurred. But this conclusion would be premature.

I will follow the more nuanced and fully investigative mediation decision tree shown in Figure 3, as adapted from Zhao, Lynch and Chen (2010: 201). To proceed, I conduct a Sobel test (Baron & Kenny, 1986) of the significance of *a x b* or the indirect effect of distance on performance. To be clear, the coefficient on the various distance dimensions from the regression of deviation on distance (from Table 5) is represented by *a* (in Table 8). Coefficients on deviation and on the various distance dimensions from the regression of performance on deviation and distance (from Table 7) are represented respectively by *b* and *c*. Table 8 shows the results of the Sobel test, with the calculation of the test statistic (Z), reported with its p-value, along with the calculated effect ratio for distances with a statistically significant result for the indirect effect (*a x b*). My mediation hypothesis (H4) finds support for the majority of distance dimensions, with significant Sobel test results for administrative, cultural (all measures), economic, geographic and knowledge distances. Following the decision tree from Zhao et al.
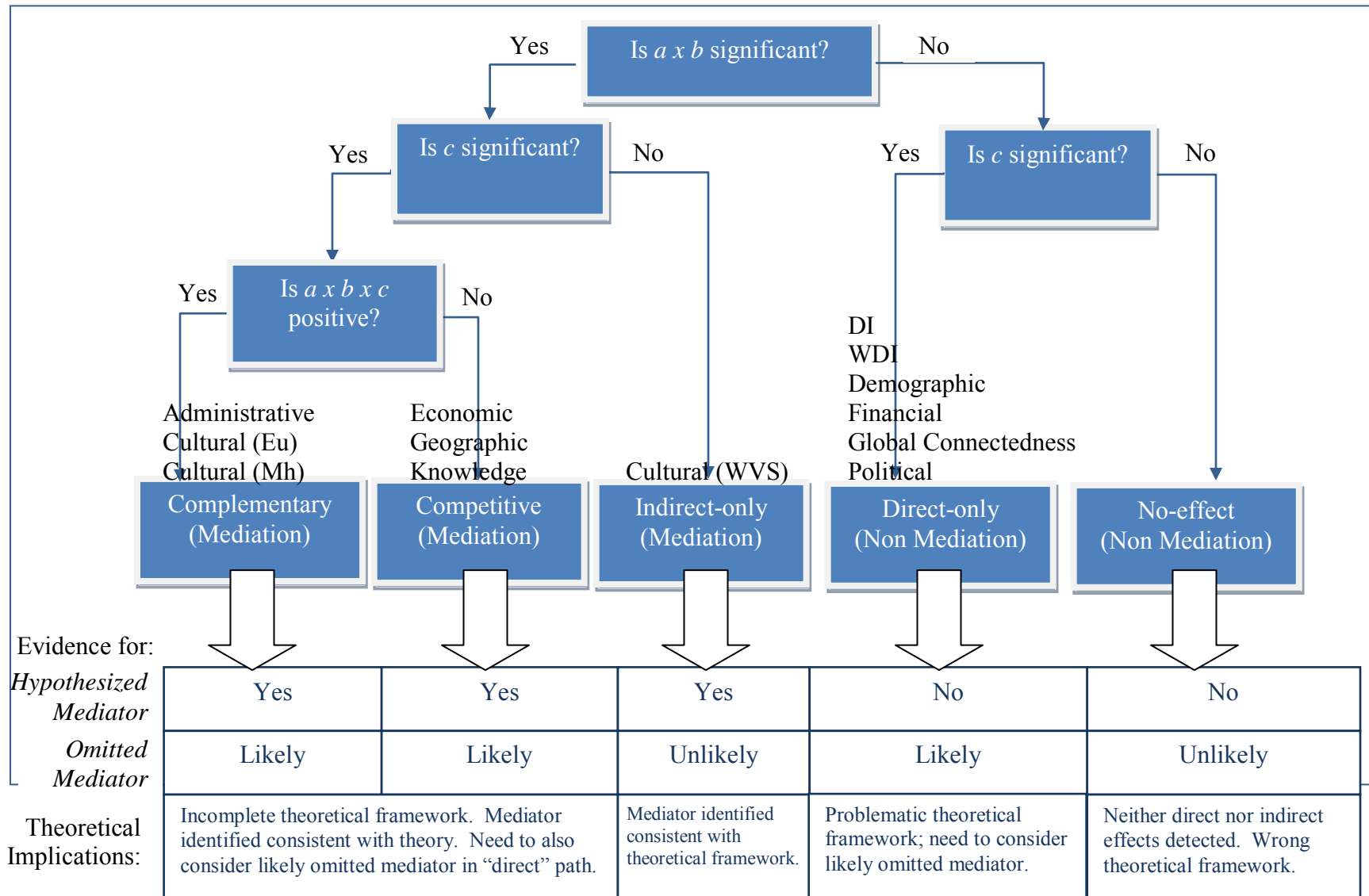
50

FIGURE 3 – DECISION TREE FOR ESTABLISHING AND UNDERSTANDING TYPES OF MEDIATION
(adapted from Zhao, Lynch and Chen (2010): 201)

TABLE 7 – PANEL DATA REGRESSIONS TESTING HYPOTHESIS 4: MEDIATION

DV=Performance Model #:	H4a 26	H4b 27	H4c 28	H4d 29	H4e 30	H4f 31	H4g 32	H4h 33	H4i 34	H4 35	H4 36	H4 37
Deviation	-.203**	-.195**	-.188**	-.220**	-.192**	-.182**	-.200**	-.217**	.114+	-.036	-.188**	-.187**
Administrative Admin²	-.009** 3e-5**									-.002 3e-6		
Cultural(Mh) Cult_Mh²		-.174** .032**								-.083 .044**		
Demographic Demo²			-.045* .007**							.099* -.010+		
Economic Econ²				-.064** .002**						-.098** .002**		
Financial Fin²					-.058** .004**					.025+ .001		
Geographic Geog²						.0001** -5e-9**				.0002** -7e-9**		
Global Conn. Glbl²							-.034** .001**			-.011 .0003*		
Knowledge Knwlg²								-.019** .0001*		.0037 .0001		
Political Polit²									7e-5* -5e-9	-2e-6 -5e-10		
DI DI²											-.111** .228**	
WDI WDI²												-.095** .157**
Lagged Perf.	.6195**	.6359**	.6377**	.5935**	.6338**	.6266**	.6239**	.6022**	.6351**	.5588**	.6395**	.6402**
Age	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**	.0002**	.0001**	.0002**	.0001**	.0001**
Growth	-.020**	-.020**	-.019**	-.010**	-.015**	-.012**	-.017**	-.007+	-.018**	-.007	-.015**	-.014**
Obs	6483	6418	6483	6483	6363	6483	6221	6203	6348	5821	6483	6483
Locations	350	348	350	350	346	350	345	338	344	327	350	350
R²: Within	.4551	.4534	.4535	.4553	.4500	.4550	.4574	.4482	.4551	.4557	.4530	.4527
R²: Between	.9195	.9288	.9266	.9152	.9270	.9235	.9270	.9074	.9236	.9059	.9302	.9301
R²: Overall	.8007	.7991	.7971	.8021	.7991	.7946	.7977	.7958	.8003	.8104	.7986	.7986

** $p < 0.01$; * $p < 0.05$; + $p < 0.1$; all two-tailed test; All regressions include year and month dummies (results omitted for brevity).

(2010), I further examine the significance of the direct effect (*c*) and find that only one of the distance variables (the World Values Survey-based measure of cultural distance) is mediated by deviation in the strict indirect-only, Baron and Kenny sense. However, there is also evidence to support both complementary and competitive mediation. Administrative distance and the Hofstede cultural distance variables (both Euclidean and Mahalanobis) exhibit complementary mediation by deviation. This means that the mediated or indirect effect (*a x b*) and the direct effect (*c*) both exist (possess statistical significance) and point in the same direction (have the same sign). In other words, these distance measures affect performance negatively both directly and indirectly (through their effect on deviation). Meanwhile, evidence in Table 8 is interpreted using the Figure 3 decision tree to reveal that economic, geographic, and knowledge distance exhibit competitive mediation. This means that the mediated or indirect effect (*a x b*) and the direct effect (*c*) both exist, but point in opposite directions (oppose one another in sign). The aforementioned types of distance therefore impact performance differently depending on whether the effect is direct or through the path of deviation from the template. Demographic, financial, global connectedness, and political distance seem to show only direct effects on performance and no mediation through greater deviation from a template. This is also true for both the weighted and unweighted distance indices. For all of these various distance dimensions, the Zhao et al. approach guides us toward the likely presence of an omitted mediator, perhaps also in the direct path between distance and performance. This will provide an impetus for further research.

<p style="text-align:center">TABLE 8 – RESULTS OF SOBEL TEST[a] AND EFFECT RATIO[b,c]</p>

Mediator: Deviation DV: Performance	c	a	SE_a	b	SE_b	Z	Effect ratio
Distances:							
Administrative	-0.00899	0.00040	0.00008	-0.20295	0.02618	-4.35**	0.01
Cultural (WVS)	-0.01699	-0.00475	0.00171	-0.22784	0.02918	2.62**	0.06
Cultural (Hofstede Eu)	-0.20908	0.02007	0.00518	-0.19782	0.02641	-3.44**	0.02
Cultural (Hofstede Mh)	-0.17448	0.01269	0.00601	-0.19459	0.02652	-2.03*	0.01
Demographic	-0.04458	0.00189	0.00290	-0.18826	0.02632	-0.65	n.a.
Economic	-0.06444	-0.00199	0.00078	-0.21995	0.02583	2.43*	0.01
Financial	-0.05804	0.00031	0.00169	-0.19197	0.02640	-0.18	n.a.
Geographic	0.00013	0.00000	0.00000	-0.18193	0.02618	1.79+	0.01
Global Conn.	-0.03406	-0.00122	0.00078	-0.19962	0.02632	1.53	n.a.
Knowledge	-0.01902	-0.00399	0.00056	-0.21671	0.02640	5.39**	0.05
Political	0.00007	0.00001	0.00000	0.11401	0.05936	1.54	n.a.
DI	-0.11124	-0.00110	0.01564	-0.18773	0.02629	0.07	n.a.
WDI	-0.09476	-0.00018	0.01315	-0.18749	0.02630	0.01	n.a.

[a] $Z = a \times b / \sqrt{(SE_b^2 a^2 + SE_a^2 b^2)}$ (Baron and Kenny, 1986)
[b] $Effect\ ratio = a \times b / c$ (indirect effect/total effect)
[c] ** p < 0.01; * p < 0.05; all two-tailed test

Finally, Models 38 through 48 (found in Table 9) report the estimates for regressions to test hypothesis 5 regarding the joint (interaction, or moderating) effects of deviation and distance. Since deviation appears to have the stronger, more robust performance relationship based on the results already discussed, I will consider that distance is the moderator. Consistent with the predictions of H5b, H5c, H5g and H5h, the pattern of signs on the coefficients of the linear and quadratic interaction terms are exactly opposite of the main linear and quadratic distance effects for cultural, demographic, global connectedness and knowledge distances. For cultural and demographic distance, statistical significance also supports the hypotheses. All of the terms except the quadratic interaction are significant in the case of global connectedness distance; only the main effect of knowledge distance is distinguishable from zero. All of the other distance dimensions and indices either do not follow the hypothesized sign pattern or lack statistical significance, or both. Administrative distance is an interesting exception case, with all the main

effects and interaction terms highly significant, but with deviation switching in sign (i.e.

becoming positive) instead of the interaction terms opposing the sign of the main linear and

squared terms for administrative distance (H5a, Model 38). In sum, the moderation hypotheses

taken together find some, although not uniformly strong, support from the results reported in

Table 9.

TABLE 9 – PANEL DATA REGRESSIONS TESTING HYPOTHESIS 5: MODERATION

DV=Performance	H5a	H5b	H5c	H5d	H5e	H5f
Model #:	38	39	40	41	42	43
Deviation	1.41**	-1.93**	-.867**	.052	-.240	1.20*
Administrative	-.005**					
Dev X Admin	-.029**					
$Admin^2$	1e-5**					
Dev X $Admin^2$	1e-4**					
Cultural (Mh)		-.398**				
Dev X Cult(Mh)		1.32**				
$Cult(Mh)^2$		.065**				
Dev X $Cult(Mh)^2$		-.198**				
Demographic			-.133**			
Dev X Demo			.612**			
$Demo^2$			.018**			
Dev X $Demo^2$			-.081**			
Economic				-.059**		
Dev X Econ				-.035$^+$		
$Econ^2$				.002**		
Dev X $Econ^2$				.001		
Financial					-.051**	
Dev X Fin					-.022	
Fin^2					.002$^+$	
Dev X Fin^2					.010	
Geographic						2e-4**
Dev X Geog						-3e-4*
$Geog^2$						-7e-9**
Dev X $Geog^2$						1e-8$^+$
Lagged Perf.	.6192**	.6235**	.6255**	.5952**	.6325**	.6248**
Age	.0001**	.0001**	.0001**	.0001**	.0001**	.0001**
Growth	-.0189**	-.0199**	-.0187**	-.0102**	-.0155**	-.0110**
Obs	6483	6418	6483	6483	6363	6483
Locations	350	348	350	350	346	350
R^2: Within	.4594	.4606	.4581	.4564	.4520	.4561
R^2: Between	.9149	.9261	.9213	.9145	.9268	.9227
R^2: Overall	.8014	.8008	.7967	.8023	.7995	.7956

** $p < 0.01$; * $p < 0.05$; $^+$ $p < 0.1$; all two-tailed test; Year and month dummies included (results omitted for brevity).

TABLE 9 (continued)

DV=Performance Model #:	H5g 44	H5h 45	H5i 46	H5 47	H5 48
Deviation	-.245**	-.241	-.314*	-.106	-.242**
Global Conn.	-.040**				
Dev X Glbl	.076**				
Glbl^2	.001**				
Dev X Glbl^2	-.0005				
Knowledge		-.020**			
Dev X Knwlg		.008			
Knwlg^2		.0002			
Dev X Knwlg^2		-.0003			
Political			2.8e-5		
Dev X Polit			.0004**		
Polit^2			-3e-9		
Dev X Polit^2			-4e-8		
IDI				-.077*	
Dev X IDI				-.292$^+$	
IDI^2				.279**	
Dev X IDI^2				-.458	
WIDI					-.088**
Dev X WIDI					-.024
WIDI^2					.076
Dev X WIDI^2					.511
Lagged Perf.	.6204**	.6025**	.6316**	.6377**	.6412**
Age	.0001**	.0002**	.0001**	.0001**	.0001**
Growth	-.0161**	-.0072$^+$	-.0170**	-.0144**	-.0146**
Obs	6221	6203	6348	6483	6483
Locations	345	338	344	350	350
R^2: Within	.4597	.4480	.4565	.4536	.4533
R^2: Between	.9248	.9082	.9226	.9295	.9308
R^2: Overall	.7982	.7956	.7999	.7987	.7991

** $p < 0.01$; * $p < 0.05$; $^+$ $p < 0.1$; all two-tailed test; year/month dummies included (results omitted for brevity)

DISCUSSION

A primary motivation for this study is to examine the performance impacts of distance in a more disaggregated, multidimensional fashion. While the predominant thinking for decades has been that firms perform best in foreign markets that exhibit more similarity to their home market (Johanson & Vahlne, 1977), more recent research has shown that similarity may breed carelessness, leading to a distance paradox wherein differences actually enhance performance (Evans & Mavondo, 2002; O'Grady & Lane, 1996). One of my primary research questions has focused on pulling apart the distance construct to take a look at the performance impact of multiple dimensions of distance. The results for Hypothesis 1 show that cultural, economic, financial, global connectedness, and knowledge distance behave "conventionally"—with a negative performance relationship—while the positive sign on administrative, geographic, and political distance coefficients in the performance regressions show support for the distance paradox. The positive performance relationship of these latter three distance types means that firms perform better in dissimilar environments, or conversely that performance is worse in more similar settings. This evidence would suggest that administrative, geographic and political differences between countries, while seeming to be among the easiest to perceive are actually the types of distance that most frequently escape attention or get overlooked. On its face this finding is somewhat surprising, given that differences of language, religion, legal systems, colonial history, physical location, and government stability, democracy, and size would all seem to be relatively easy to observe and factor into managerial decision-making.

We should consider an alternative explanation for political distance having a positive performance impact. Research in public economics has found that press freedom (Brunetti & Weder, 2003) as well as longstanding, stable democracy both predict lower levels of corruption—or "the misuse of public office for private gain" (Treisman, 2000). This logic connects back to political distance, as the idea of dissimilarity with a stable democracy (the U.S.) may proxy for higher levels of corruption. In most countries the postal service is a governmental or quasi-governmental institution, and where corruption is more rampant, a private business offering competing services may enjoy significant performance benefits. My sample data comes from just such a competitor: a franchise organization providing mailbox rentals, copying and shipping services. Thus, I would suggest that the level of political distance in the current study setting may predict higher corruption levels, which in turn lead to better performance (higher revenues) for the focal organization.

The results for tests of my second hypothesis, which states that greater distance leads to more deviation from the template, further emphasize that not all dimensions of distance are alike. Again various distance types exhibit a pattern of conflicting signs, with some driving deviation (as expected) and others actually suppressing it. Evidence for economic, geographic, and knowledge distance contradicts the notion that more contextual differences necessitate more deviation from established organizational routines or templates in order to preserve contextual fit and enhance performance (Argote & Ingram, 2000; Bartlett & Ghoshal, 1989; Kostova, 1999; Luo, 2000; Morosini et al., 1998; Sorge, 1991). On the other hand, administrative, cultural and political distance display the hypothesized positive relationship with deviation, supporting arguments mentioned in favor of contextual fit and contextual differences, or distance, acting as a driver of deviation from the template. It may be that the opposing (negative) results for

economic and knowledge distance are evidence of franchisees' reluctance to stray from the established MBE template under conditions of lower (relative to the U.S.) levels of economic development or entrepreneurial talent and propensity for risk-taking due to a view that the template's U.S. origin equates to it containing superior knowledge. Privileging a template whose source is in the U.S. may make sense to some in an environment where scientific knowledge and economic development lags far behind. It is hard to see how this logic would apply at all to environments separated only by greater physical (geographic) distance.

I hypothesized that deviation from standardized routines would damage performance in the absence of significant contextual differences (of whatever type). This was supported by the logic of causal ambiguity (Lippman & Rumelt, 1982; Winter & Szulanski, 2002): namely, that routines that are often complex (Rivkin, 2000) with interdependent parts (Siggelkow, 2001; Thompson, 1967) have causal linkages between the individual elements of the routine and the performance success that resulted from their effective use as a whole template that are difficult to observe. This makes replication by copying exactly preferred to deviation from the template, which will bring negative performance consequences (Jensen & Szulanski, 2007; Szulanski & Jensen, 2006, 2008; Szulanski et al., 2000). The third hypothesis was strongly supported by the empirical evidence, with deviation maintaining a strong negative relationship to performance across specifications. In the context of the current study and under conditions where causal ambiguity is in operation, this certainly reinforces the need to focus on exact replication, especially in the absence of contextual differences but also in their presence.

Another purpose of this study was to explore how deviation mediates the performance effect of distance, and gain a richer understanding of how distance and deviation interrelate. The results of the mediation analysis (see Tables 7 and 8, Figure 3) demonstrate again that it is vital

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to differentiate between dimensions of distance. While some distance types (demographic, financial, global connectedness, and political) show only direct effects on performance and no role of deviation as a mediator, in the majority of cases (administrative, cultural, economic, geographic, and knowledge distance) deviation is shown to play a significant role either as a traditional (indirect effect only), complementary (direct and indirect effect, same sign) or competitive (direct and indirect effect, opposing sign) mediator. Furthermore, regression results for linear (-) and squared (+) distance terms largely support the notion that a contextual fit mechanism induces a U-shaped distance-to-performance relationship. The mechanism functions as follows: performance suffers at relatively low levels of contextual difference with no triggered deviation from the template and improves once a threshold is reached and salient differences drive deviation to achieve better fit between template and context.

Finally, in my fifth hypothesis I sought an answer to whether deviation is more damaging to performance at lower levels of distance and less damaging where distances are higher. This question was examined via regression analysis of distance as a moderator of the deviation to performance relationship. The evidence provided in Table 9 shows that my moderation hypothesis was only supported for a few of the dimensions of institutional distance. Cultural and demographic distance, and to a lesser degree global connectedness distance, exhibit the expected pattern of signs on deviation, distance, distance-squared, and interaction terms. This sustains the validity of the idea that deviation hurts performance more at lower levels of cultural, demographic and global connectedness distance, and less when those distances are greater. However, no such support can be claimed from the inconsistent and contradictory results shown for other distance dimensions. One interesting result from this part of the study is shown in Model 38 of Table 9. In the regression of performance on deviation and administrative distance,

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all the main effects and interaction terms (linear and squared) are highly significant, but with deviation displaying a sign switch rather than the interaction terms. This might be interpreted as indicative of the relationship reaching the threshold where, at higher levels of administrative distance, the performance effect of deviation has actually turned positive. Overall, some support is found for the moderation hypothesis, but only for some dimensions of distance.

THEORY IMPLICATIONS

My study has several implications that strengthen theory, both for the application of the distance construct in a variety of strategy and IB settings and for better understanding knowledge transfer and performance. First, considerable evidence from this research has reinforced the need to examine more closely a multidimensional and disaggregated view of distance rather than continuing to employ summative, unidimensional, aggregate distance conceptualizations. My results suggest that the constituent dimensions of distance sometimes act together, but may often act in opposite directions, obscuring their overall effects. Specifically, the results for my regressions testing H2 (shown in Table 5) bear out this story. The measurement and study of the effects of a single higher-order distance construct (e.g. cultural distance) or those of an index of various lower-order dimensions (e.g. DI or WDI) can greatly increase the likelihood that an incomplete and possibly quite inaccurate picture of the effects of distance may emerge. Looking at DI or WDI we would conclude that in this study distance had no discernible effect one way or the other on deviation from a template. Drilling down to the lower-order dimensions of distance allows us to get a much clearer sense of what is really happening, as certain kinds of distance seem to be driving more deviation and others driving less. My research therefore contributes

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empirical support for the caution urged by Zaheer et al. (2012) to avoid using overly broad distance constructs that would tend toward a loss of nuance and meaning. Careful consideration of the differential effects of multiple distance types on variables of interest to theorists will add depth, power and precision to their proposed frameworks. Pushing the literature involving distance to routinely discriminate between the richly varying dimensions of the distance construct will also enhance its utility to practitioners.

Second, the evidence provided gives support to the emerging theoretical and empirical literature on exact replication by showing the negative performance consequences of deviating from the template, especially in the absence of distance (or contextual differences). This finding constitutes something of a challenge to the prevalent notion that differences in environment must provoke changes to organizational routines in order to maintain contextual fit and preserve positive performance. My results rather suggest that performance damage from deviating from an established template may persist even in the face of high levels of contextual differences. There is a need to further explore which types of contextual difference matter most within the phenomena being studied, rather than making the dangerous assumption that all types of distance are similarly indicative of a need to deviate.

Another implication for theory is the apparent need to search out an additional mediator (or mediators) omitted from the current study. The mediation analysis included a decision tree (see Figure 3) that I adapted from Zhao, Lynch and Chen (2010). It shows that while support was found for deviation as a mediator of the distance-performance relationship, the pattern of signs and significance for several of the distance dimensions points to the need to identify a likely additional mediator along the same direct distance-to-performance path.

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PRACTICAL IMPLICATIONS

This study aims to contribute to a better understanding of the circumstances under which deviation from a template (vs. exactly copying it) may be advisable in cross-border knowledge transfer settings. It also seeks to call managerial attention to which types of differences between environments are most important to organizational performance.

One implication for managers from the performance regression on distance dimensions is the need to address the potential negative performance impacts of cultural, economic, financial, global connectedness and knowledge distances that may exist between environments. The results of this study suggest that the well-documented challenges of managing across borders can be particularly acute where a business model developed in a place with different cultural norms and values, levels of economic or financial sector development, degree of connection to the rest of the world, and/or levels of scientific and innovative activity is being applied. Furthermore, managers in a franchise setting would do well to avoid performance decreases resulting from deviation from the organizational routines and practices embedded in an established franchise template or business model. Performance damage from deviation is particularly likely to occur where distances between the source and recipient environments are low (differences are small).

Where source-recipient (or home-host country) distances are higher, my results point to less damage from deviation, at least in the case of administrative, cultural, or demographic differences. In other words, if high levels of distance exist along the dimensions of language, religion, legal system, and colonial ties, cultural norms and values, or population characteristics such as age, birth rate and life expectancy, then deviation from the template may be more justifiable and necessary and less damaging to performance than in situations where these distances are lower, or where the differences between the environments occur along other

dimensions. Future research should be focused on discovering more precisely when the performance impacts of deviation potentially change from negative to positive, in the presence of administrative, cultural and demographic distance, and how the role of these and other distance types may change from one industry to another.

Another implication I can draw out from the positive performance impacts of administrative, geographic, and political distances is that managers should be wary of glossing over important differences along these lines. It is likely that physical proximity as well as apparent similarities along the lines of language, religion, colonial ties, legal systems, political democracy, and government size and stability may often obscure important underlying administrative and political differences that do exist between countries. These surface similarities can cause managers to gloss over the deeper differences, bringing negative performance results.

LIMITATIONS

As with any research, my study has limitations that suggest interesting ways to pursue greater theoretical refinement and practical usefulness. One such limitation relates to the generalizability of my findings. This study was conducted with data from a single franchise firm (Mail Boxes Etc.) within just one industry (services to the small office/home office market). As such, it is reasonable to question whether the results are unique to the industry, to the franchise setting, or even just to franchisees seeking to follow templates originating from the U.S. These issues provide opportunities for future researchers to tap into firms in other industries, organizations outside of the franchise setting, and templates sourced in countries outside the U.S. to examine whether the findings of this study can be generalized beyond its immediate context.

Another possible limitation of this study stems from the lack of availability of some of the data I would have preferred to use to measure cultural distance. While the Hofstede data is freely available and was used to construct my main measures of cultural distance, the increasingly popular GLOBE measures, or others based on them, were not available for many of the countries in my sample. The extension of the GLOBE project and other research devoted to measuring differences in cultural norms and values across national boundaries will certainly add to the ability of future researchers to explore the application of my results in many smaller and more far-flung locations that are increasingly becoming areas of interest to managers of both local and multinational enterprises.

This brings me to another very common limitation of research related to distance, which is also related to the availability of distance measures at more local levels of analysis. Although one might prefer to study deviation and performance at the level of the local franchisee, the distance data that is available is almost invariably measured only at the national level. More fine-grained information on differences existing within countries (such as between regions, states, provinces, counties, cities, or even municipalities) is typically very difficult to obtain, making research on distance necessarily limited to a view based on national boundaries, when it is well known that very important, perhaps even more relevant, and often more interesting differences occur across boundaries that lie closer to home.

FUTURE RESEARCH

Several appealing avenues researchers may wish to pursue have already been suggested in this discussion, such as examining in greater detail the performance impact of deviation from a

template in the presence of specific types of distance to try to understand how that impact varies across industries and types of organizations, or looking for an elusive omitted mediator variable (or variables) at work whose likely presence has been indicated herein. Additional complexities apparent in my results are left to future work, including the potential for curvilinearity in the effects of different kinds of distance on performance. The troubling changes in sign and significance between regressions involving individual distance types and full models utilizing them all may point to underlying complexities missed in the current theoretical and empirical analysis.

A fuller exploration of the threshold effect alluded to in the depiction of the contextual fit mechanism at work in my model would certainly add to our understanding of managerial responses to pressures to deviate and not to deviate in the presence of contextual differences. This would require a much more detailed look at managerial perceptions and actions in the presence of different levels and types of distance, in the hope of discovering where exactly the inflection point lies—where performance dips due to lack of contextual fit make distance become salient, and trigger managers to deviate from the established practices and routines set in place by their organization.

The study of distance, already pushing in the direction of greater multidimensionality, would be further enhanced by resisting the urge to settle too early on a given set of distance dimensions. The careful pursuit of detecting, defining and studying even more distance dimensions is encouraged, to my point of view, by additional nuances suggested in the use of the nine dimensions of Berry and co-authors (2010) in this study. Does knowledge distance—as defined, measured with patents and scientific research production—relate to entrepreneurial activity, or would not a more direct measure of entrepreneurial creativity, risk-taking, and talent be more

likely to play a significant role in many non-high-tech industries? A measure of entrepreneurship distance might prove to be quite useful in studying firm and industry performance as well as economic development. The element of contextual differences in corruption has raised a great deal of interest in researchers, and may be worth separating out from political distance per se. Additional refinements to cultural and administrative distances, in particular the role of religion and language, seem to be areas rich in promise for further study as their influence on cognition, mental models, and communication is well documented in other disciplines but underexplored in management research. Of course, some caution is warranted lest an explosion of overly narrow and undifferentiated distance dimensions detract from the usefulness of the distance construct in international business research. The current move away from summative, unidimensional conceptualizations of distance and towards greater complexity and specificity is not only desirable but overdue.

I therefore call upon interested researchers to help address these challenges and urge all to assist in moving the literature on institutional, cultural, and all other forms of cross-border distance into a richer, more theoretically sound and more practically useful future.

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