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MARKET NICHE ENTRY DECISIONS: COMPETITION, LEARNING, AND STRATEGY IN TOKYO BANKING, 1894–1936

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An organization's choice of a branch location can be analyzed as a market niche entry decision. This study builds theory on how an organization's decision makers evaluate market niches on the basis of competitive environment, learning from others, the organization's own experience, and proactive strategy, and it tests the theory with data on branch entry decisions of early Tokyo banks. Analysis of how decisions were affected by density dependence, mimetic isomorphism, decision-making momentum, and mutual forbearance shows strong evidence of influence from the local competitive environment, the actions of large organizations, and the organization's experience, and weaker evidence of proactive strategy.

Both when organizations are established and when they grow by establishing branch networks, they occupy specific locations in geographical space. What guides their choices of locations? Spatial distance creates costs for a firm: costs of moving products, costs of communicating, and costs of managing all increase when distances increase. Distance also gives opportunities: a firm may get nearby customers to use its services, although better ones are available elsewhere, because customers have mobility or information collection costs that increase with distance. Location decisions determine a firm's relations with customers and competitors and have implications for its costs and management. In this study, I analyzed location decisions as choices of market niches and tested hypotheses from four major perspectives: density dependence, interorganizational imitation, intraorganizational learning, and mutual forbearance.

My approach differs from earlier work on location decisions. In one research tradition, location decisions have been treated as strategies for reducing the production and transportation costs of manufacturing firms (Ghosh & Rushton, 1987; Weber, 1929). Researchers pursuing another line have examined how the economic development of regions creates positive externalities that attract firms (Arthur, 1994; Marshall, 1925; Porter, 1990). In a third tradition, monopolistic competition among retailers in spatial markets has been considered (Hotelling, 1929; Prescott & Visscher, 1977; ReVelle, 1986). Profit maximization and few, if any, limitations on rationality and access to information are assumed in these traditions, and theoretical models are emphasized more than empirical research (but see Kim [1995] and Porter [1990]).

Viewing locations as market niches connects location decisions to central concerns of organizational theory, as organizational adaptation to market opportunities is a behavior that currently attracts great interest (e.g., Carroll, Bigelow, Seidel, & Tsai, 1996; Haveman, 1993; Mitchell, 1989; Ruef, 1997; Swaminathan, 1995) and can be analyzed from multiple lines of theory. The problem of selecting promising market niches for entry leads naturally to population ecology's theory of legitimation and competition in the market (Hannan & Freeman, 1987). Alternatively, it can be seen as a problem of learning from others, leading to an institutional process of mimetic market entry (Haveman, 1993). Third, since market entry decisions are made repeatedly in growing firms, they may be subject to a momentum process, whereby the organizations learn from their experience by repeating decisions that appear successful (Kelly & Amburgey, 1991; Levitt & March, 1988). Fourth, managers can be forward-looking actors who seek to share multiple markets with their competitors and thus forbear from price competition (Edwards, 1955; Simmel, 1950).

All these theories give rival predictions as to which markets organizations will enter, but comparison of the theories suggests a deeper conflict between two of them than among the rest. The

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ecological and institutional theories both describe current market opportunities that are likely to play a role in managerial thinking even if managers seek to repeat early successes or plot strategies against competitors. There is a stronger conflict between repeating past decisions and creating multimarket contact, as the former requires attention to an organization's own past actions but the latter requires attention to the future actions of competitors. The predictions are also opposed, as creation of multimarket contacts requires an organization to disperse its branches, but momentum will lead to concentration of branches.

The theoretical rivalry suggests that insight into market entry decisions can contribute to solving two puzzles of interest to management researchers. First, this rivalry raises the issue of time perspective in managerial decision making, as the theories assume attention either to current opportunities in an environment, past experiences of an organization, or future competitive relations. This divergence reflects a continuing theoretical debate between perspectives assuming learning from experience and rational consideration of future consequences (Kahneman & Tversky, 1979; March, 1994; Simon, 1991). The theory of rational decision making rests on the assumption that decision makers know all the available alternatives and can forecast the returns to each alternative (at least as a probability distribution), but the theory of bounded rationality rests on the assumption that problems of decision maker attention and comprehension make such complete knowledge impossible (March, 1994: 1–21). To cope with their limitations, decision makers rely on attention and search routines that conserve cognitive resources, and these routines are strongly shaped by experience (Ocasio, 1997). Thus, the bounded rationality prediction would be that the history of an organization should give strong clues to its future behavior.

Second, the theoretical conflict raises the issue of how organizational size relates to behavior and outcomes, as both momentum and forbearance are theories of what happens when organizations establish multiple branch units. Evidence of momentum or forbearance will show that branch systems manage these decisions differently than single-unit organizations. Analyses of the performance of branch systems suggest that they perform better than single-unit organizations under some conditions (e.g., Barnett, Greve, & Park, 1994; Ingram & Baum, 1997), and the difference in market entry is a possible explanation of their advantage (Baum & Ingram, 1998). Neither the finding nor the explanation are without controversy. Some researchers have found disadvantages of branch organizations (Greve, 1999; Sorenson & Audia, 1998). Others have found advantages but have explained them as resulting from either the increased operating efficiency of their units (Darr, Argote, & Epple, 1995) or the selective choice of competitive battles (Barnett et al., 1994).

Empirical research has so far concentrated on the theory of market opportunities. Baum and Haveman (1997) showed that market entry decisions were influenced by the size and price range of local competitors. Sorenson and Audia (1998) used density dependence theory to predict spatial agglomeration in organizational founding and found support for this prediction. Hedström (1994) predicted that spatial differentiation of social networks would lead to local imitation of organizational establishment and found support for this prediction. This recent spurt of research suggests a renewal of interest in human ecology's agenda of exploring how spatial relations order social and economic relations (Hawley, 1950).

An effective approach to studying organizational market niche entry is to trace how a new form of organization spreads in a geographically distributed market where the spatial relations of different locations are well known and consequential for the mobility of customers. Here, the entry of bank branches in Tokyo from 1894 to 1936 is examined. This period saw the establishment of a modern banking system in Japan and the change of many unit banks into branch systems. Tokyo was a contiguous market with nontrivial mobility costs, so branch location decisions were consequential and interrelated. It is likely that bank managers considered the customer base and competition in different areas before choosing the location of each new branch. They may also have worried about entering unknown locations and strategized about how their locations might preempt their competitors or exempt them from competition. Whether these concerns affected the decisions can be determined by analyzing how location choices were affected by the customer population, the branches of other banks, and a decision-making bank's own branches.

THEORY AND HYPOTHESES

Density Dependence

According to ecological theory, organizations exist in niches that provide the resources that support them and their competitors. A niche is defined as the social and economic conditions that can support one form of organization (Hannan & Freeman, 1977: 946–947), and geographical space is clearly one such condition, since the locations of customers and transportation costs determine the support for an organizational form in a given place. Niches are continuous, just as geographical space is, but they are more conveniently analyzed by breaking them into discrete units, such as nations or subnational regions (Carroll & Wade, 1991; Freeman & Lomi, 1994; Hannan, Carroll, Dundon, & Torres, 1995; Sorenson & Audia, 1998).

It is useful to start the discussion of the ecological theory of niches with a comparison with the economic theory of pricing in spatial markets. This theory shows that organizations near each other compete more strongly than organizations farther away, but because price competition among neighbors affects their neighbors in turn, competitive effects are also felt across a distance (Prescott & Visscher, 1977; Schmalensee, 1978). Thus, the entire market in which these organizations participate is interdependent, but the lowest interdependence and best opportunities are in open niches far away from competitors. When firms enter a market sequentially, this local competition should cause them to locate at a maximum distance from previous establishments (Prescott & Visscher, 1977).

Ecological theorists agree that competition is important and stronger for organizations sharing a niche (Hannan & Freeman, 1977) but adds the problem of evaluating opportunities. Although open niches may be easy to recognize, they are difficult to evaluate because their resources are unknown and may not be sufficient to sustain even a single organization. Uncertain outcome from making changes, caused by either external or internal constraints on information collection, may cause organizations to avoid change (Hannan & Freeman, 1977). Organizations rarely explore open niches because decision makers have strong risk aversion and may wait to establish until others have gone first and proven the niches to be viable (Leifer & White, 1987). However, if many establish in the same niche, decision makers will anticipate strong competition and will be reluctant to enter (Hannan & Freeman, 1987). This argument suggests an inverted ∪-shaped relationship between local market density and the attraction to a niche:

Hypothesis 1. There will be an inverted ∪-shaped relationship between the organizational density of a market niche and its attractiveness.

This hypothesis is similar to the density dependence hypothesis in organizational founding theory (Hannan & Freeman, 1987, 1989), but there are two differences: First, density dependence in organizational founding is a hypothesis on the *rate of establishing* new organizations, and this is a hypothesis on the *selection of niches* for new branches (conditional on new branches being established). Second, density dependence in organizational founding is argued because of the trade-off between total environmental resources and legitimation of an organizational form, but density dependence in niche choice is argued because of the trade-off between local environmental resources and decision-making bias against exploration of new resources.

According to spatial market theory, lower density is always better, but according to the density dependence argument, an intermediate density will make a region most attractive, so these theories clearly imply opposing predictions. Another economic theory implies a conclusion similar to the density dependence implication, however. The argument of spatial agglomeration theory is that firms improve local technology, labor markets, and suppliers and that these local external economies cause organizations to agglomerate until all are in one location or local competition prevents further agglomeration (Arthur, 1987; Krugman, 1991, 1992).

Mimetic Entry

Entering new markets is a growth strategy, and for small organizations it is a major organizational change that introduces uncertainty about the specific choice of a new market and about how a large organization behaves in general. A decision maker who seeks to learn from the experience of others can resolve some of this uncertainty by observing and imitating the niche entry behavior of large organizations. Institutional theorists predict that organizations imitate others under conditions of uncertainty (DiMaggio & Powell, 1983; Haunschild, 1994), and a similar argument has been made in density dependence theory (Hannan & Carroll, 1992: 33–36).

If all firms were equally likely to be imitated, then imitation would differ little from density dependence. Current work on institutional theory goes further by examining heterogeneity in imitation, as firms are more likely to imitate others that are easily observable, similar to themselves, or socially prominent (Davis & Greve, 1997; Galaskiewicz & Burt, 1991; Greve, 1996; Haveman, 1993; Hedström, 1994). Managers notice and weight information using observability and relevance heuristics, leading firms to imitate those whose actions they can easily observe and whose situations are similar to their own (Greve, 1998a). In niche entry decisions, a strong relevance criterion is organizational size, as decision makers of growing firms will be particularly interested in the niche choices of firms that already have achieved largeness and will be more likely to imitate them. Firm size can also be an observability criterion, since the actions of large firms are more likely to be noticed and communicated to decision makers (Haunschild & Miner, 1997; Haveman, 1993; Lant & Baum, 1995). Thus, if the probability that a branch will be imitated is proportional to the size of its firm, one can compute the density of branches weighted by the number of branches owned by each branch's firm. Thus,

Hypothesis 2. The attractiveness of a market niche is proportional to the size-weighted density of organizations in the niche.

Decision-Making Momentum

The preceding hypotheses depict a magnetic process in which organizations are drawn into attractive niches irrespective of their characteristics or their decision makers' characteristics. In contrast, organizational learning theory rests on the assumption that organizational experience affects the selection and execution of organizational routines (Levitt & March, 1988). In the simplest models of an organization's learning from its own experience, the assumption is only that routines improve when used and that successful application of routines leads to their repetition.[1] Even such simple models have important implications, because they show that organizations repeatedly choosing from among multiple alternative strategies will quickly specialize in one strategy, often failing to notice superior alternatives (Herriott, Levinthal, & March, 1985). The exploitation of successful routines reduces the experimentation needed to discover that other routines might be even more successful (March, 1991). An important mechanism leading to this exploitation bias is decreased search and risk taking when an organization is successful (Greve, 1998b; Lant & Mezias, 1992; March, 1988). Other mechanisms also contribute. Past successes alter intraorganizational power relations and organizational identity in favor of successful organizational units (Burgelman, 1994) and build up commitment to existing customers that may prevent discovery of new ones (Christensen & Bower, 1996).

Exploitation bias results in momentum of strategic choice (Amburgey & Miner, 1992; Kelly & Amburgey, 1991) and has been observed in choices of markets and technologies (Amburgey, Kelly, & Barnett, 1993; Christensen & Bower, 1996; Noda & Bower, 1996). One might argue that momentum should depend on the outcomes of past decisions, with successful decisions being repeated and unsuccessful decisions being changed. Countering this argument is the occurrence of long time lags before the outcomes of market entry decisions are revealed, causing organizations to repeat decisions of unknown value (March, Sproull, & Tamuz, 1991). Selection processes also reduce the ability to learn from failures by generating a success bias in the pool of decision makers (Levinthal & March, 1993). Market entry requires resources that organizations are unlikely to have unless they have avoided failure in the past, so only organizations that have avoided failures get to make additional market entries. Thus,

Hypothesis 3. Organizations will establish branches in market niches where they are already established.

Momentum is a biased form of learning that prevents organizations from discovering opportunities that are distant from their initial market niche, but it does allow organizations that initially find a good niche to exploit it fully by incrementally adding branches nearby until these local opportunities are exhausted (Herriott et al., 1985). Such fine-tuning of initial niches will cause organizations to enter branches in niches near their current ones, an argument leading to this prediction:

Hypothesis 4. Organizations will establish branches in market niches next to niches where they are already established.

Hypothesis 3 directly opposes the market preemption hypothesis in economics, according to which firms seek to prevent competitors from entering new markets by entering first (Schmalensee, 1978) and will thus enter new niches rather than add branches in an existing niche. Thus, the difference between the boundedly rational and rational models is more than rhetorical, as momentum and preemption arguments lead to opposing predictions.

Mutual Forbearance

Although in learning theory there is a link between an organization's experience and its niche entry decisions, according to mutual forbearance theory, niche entry decisions will be influenced by strategic analysis of their future benefits. When organizations compete for common resources, competitive moves such as price cutting can reduce the

[1] I am grateful to James G. March for suggesting this argument.

total resources available, giving the firms incentives to reduce competition. Simple means of reducing competition, such as informal agreements on pricing, are fragile, because the incentives to cheat are high (Scherer & Ross, 1990: 244–245), but organizations that compete in multiple markets can coordinate their competitive behavior across markets. Establishment of multipoint contact with a given competitor allows an organization to benefit from mutual forbearance (Edwards, 1955; Simmel, 1950). By being able to threaten the competitor with retaliation in multiple markets, the organization can make that competitor behave less competitively. Also, by making itself vulnerable to retaliation, the organization is making a credible commitment not to initiate price cuts.

The benefits of multipoint contacts to firms have been studied theoretically and empirically. Theoreticians have checked whether mutual forbearance is possible among rational competitors and have shown that the forbearance argument holds under quite general conditions (Bernheim & Whinston, 1990). Empirical work has shown that markets with a high degree of multipoint contact have higher prices (Evans & Kessides, 1994; Gimeno & Woo, 1996) and that organizations that establish multipoint contact with their competitors have higher performance (Barnett et al., 1994; Scott, 1991) and lower failure rates (Barnett, 1993). Not all studies show such effects (see Baum and Korn [1996] for a review of this literature), but these effects are frequent enough to suggest that organizations with multipoint contacts reduce competition to earn higher profits at the consumer's expense.

The goal of a mutual forbearance strategist is to have a set of domesticated competitors that compete weakly because they meet a focal organization in multiple markets. Clearly, competitors that already meet in multiple markets are expected to compete weakly, so establishing branches near such competitors should be beneficial (Baum & Korn, 1999). Thus, organizations are likely to extend their current multipoint contacts. Establishing one more contact with a single-point competitor is also useful, as doing so can transform a competitor that competes fully in one market into a competitor that competes weakly in multiple markets. Hence, organizations are likely to seek to establish multipoint contacts with competitors they currently have single-point contact with. These arguments lead to:

Hypothesis 5. Organizations will establish branches in market niches containing multipoint competitors.

Hypothesis 6. Organizations will establish branches in market niches containing single-point competitors.

Size as a Modifier

Density dependence and imitation are purely environmental arguments, and they are usually not modified by organizational factors such as its size. The other theories can imply to size-dependent effects, however, as levels of both experience and strategic opportunities will differ depending on an organization's number of branches. First, momentum occurs in markets where an organization has received positive feedback. Small organizations have modest economic reserves and are unlikely to grow or even survive if they have experienced losses, and thus small organizations that add branches are likely to have had a history of only successful prior niche entry decisions, leading to momentum. Large organizations have greater reserves and may be able to continue growing even if they have experienced losses in some branches, and thus they are less likely to have had only successful prior entry decisions and may not show momentum in all their markets. This pattern should hold even if large organizations overall make better decisions than small ones, because small organizations that make poor entry decisions are selected away through failure, while large organizations that make poor entry decisions can adapt their future behavior (see Barnett [1997] for a similar argument). Thus,

Hypothesis 7. Large organizations will exhibit less momentum than small organizations.

Mutual forbearance is possible when organizations recognize their competitive dependence and can harm each other through competitive pricing. The ability to recognize competitive dependence may depend on organizational size, as managers of large organizations focus their attention on other large organizations and neglect small ones. The potential for harm relies on asymmetry of the organizations' commitments to their respective markets, as all will suffer through a price cut, but the organization with a smaller commitment to the market where prices are cut will suffer less (Bernheim & Whinston, 1990). Mutual forbearance works better if each organization can have many branches in one area and few in the areas where competitors have many branches, so that each can punish the others at low cost. Such uneven commitment to markets is easier to achieve for large organizations, as many branches can be distributed more unevenly than a few. Thus, my final prediction is:

Hypothesis 8. Large organizations will seek out multipoint contacts more often than small organizations.

METHODS

Early Tokyo Banking

After the fall of the feudal Tokugawa government, the new Japanese government sought to modernize rapidly and encouraged the establishment of all kinds of formal organizations characteristic of the Western societies, including banks. Still, the banking system introduced after the change of government had its roots in the medieval finance system of Japan. In the Tokugawa era, which lasted until 1868, the major cities of Japan had well-developed financial systems based on exchange brokers *(ryogae)* (Asakura, 1967; Patrick, 1967; Tamaki, 1995). The ryogae merchants had shops providing many of the same services as modern banks, but the capital used was mostly owned or mediated by the merchants. However, a deposit account system similar to that of modern banking had been created (Tamaki, 1995). The ryogae shops created skills similar to those used in modern banking and a class of capital owners that would become the owners of most banks established after the Meiji resolution (Tamaki, 1995).

When the organizational form of bank was introduced through the National Bank Act of 1873, the deposit system was still not used much, and national banks were financed largely through equity, note issue, and loans placed in the Bank of Japan. In 1886 national banks were making 86 million yen in loans based on 32 million in deposits (Bank of Japan Statistics Department, 1966). Public trust in deposit accounts was established gradually, partly legitimated by the reliability of the postal savings system of 1875 and by regulations on institutions accepting deposits (Bank of Japan Economic Research Department, 1973). Government sources of funding were gradually reduced, making individual deposits a more important source of lending capital.

The shift from government to depositors as a source of funds affected the spatial distribution of banks. The ryogae shops were concentrated in the Nihonbashi area in central Tokyo, and banks were subsequently established in the same area. In 1894, 60 of the 75 banks and branches in metropolitan Tokyo were in Nihonbashi. This concentration was not a problem as long as banks were financed through the personal connections of the owners (like the ryogae shops) or through privileges of note issue and loan brokerage from the Bank of Japan (like the national banks). However, to attract deposits it became increasingly important to locate near potential depositors, and banks started establishing branches in the other 14 wards of Tokyo and the surrounding five counties. Although branches established in open niches benefited from the transportation costs of consumers, they were not isolated from competition. Interest rates in Tokyo were subject to price competition, and attempts to fix them through a bankers' association were not stable for long (Tamaki, 1995: 107, 132–133), as one would expect if the market were so connected that neighbor-to-neighbor competition spilled over.

Tokyo grew in this period, as increased population and better means of communication spurred settlement outside the old city boundaries. The counties around Tokyo became increasingly integrated into the metropolitan area's economy and infrastructure. In 1894 the population of Tokyo was fairly centralized, and the distribution of banks and branches even more so, but both became more dispersed between 1894 and 1936, the period under study here. The actors behind the growth and dispersion of branches were the individual banks, and I analyzed this process in disaggregated form as a sequence of niche entry decisions by banks.

Sample and Data Collection

The study is limited in space to the modern Tokyo metropolitan area. This area includes the 15 original wards and five surrounding counties and excludes the rural western part of the Tokyo prefecture. The study is limited in time to the period 1894–1936. This period begins with the publication of the first annual *Census of Banks* by the Ministry of Finance, which occurred 21 years after the establishment of the first national bank and one year after the Bank Act was passed to regulate the establishment of ordinary banks (Asakura, 1967). Thus, the population could not be followed from its inception, which would have been desirable. However, 1894 is still an acceptable starting time for the study, since it marks the start of branching to seek deposits. The 1883 elimination of note-issue rights for National Banks and the 1897 decision by the Bank of Japan to deal directly with customers deprived banks of two nondeposit sources of financing: note circulation and loan brokerage. The study period ends in 1936 because government interference in banking increased from 1936 on as the economy was geared toward war (Goldsmith, 1983).

The *Census of Banks*, a contemporaneous and publicly available publication that could have been used by bank managers to decide branch locations, is based on mandatory annual reports of each bank's operations, and its precision has made it a frequently used source for research (Han, 1998; Patrick, 1967; Tamaki, 1995). It shows the location of bank headquarters and branches, and comparison of successive volumes yields branch entries. Full addresses are given, so each branch can be traced even when a bank had multiple branches in one ward or county. The addresses consist of the ward (or county) in which a bank branch was located, the town (or village), and the neighborhood *(chome)*. Modern Japanese addresses use the same system but add numbers designating the block and building. In the rare cases in which a bank had more than one branch in a neighborhood, the branches had distinctive names or numbers. Location data were nearly always given, but three branches had incomplete addresses and were omitted from the analysis.

Data on the population of the wards and counties of metropolitan Tokyo were collected from statistics published by the Tokyo metropolitan government, mostly the *Tokyo Statistical Yearbook*. The population data were assembled from the family registration records kept in local government offices. This system, which was established under the Tokugawa government and still operates today, requires each family to maintain a registration record of all its members at the local government office. The registration data were accumulated annually, giving reports of the population in the 15 wards in every year (with a couple of interruptions) since before the start of the study, and this source and others could be combined to yield the population of the counties for 32 of the 41 study years. I interpolated the population numbers for missing years by keeping the proportions of Tokyo's total population equal to the nearest reported year.

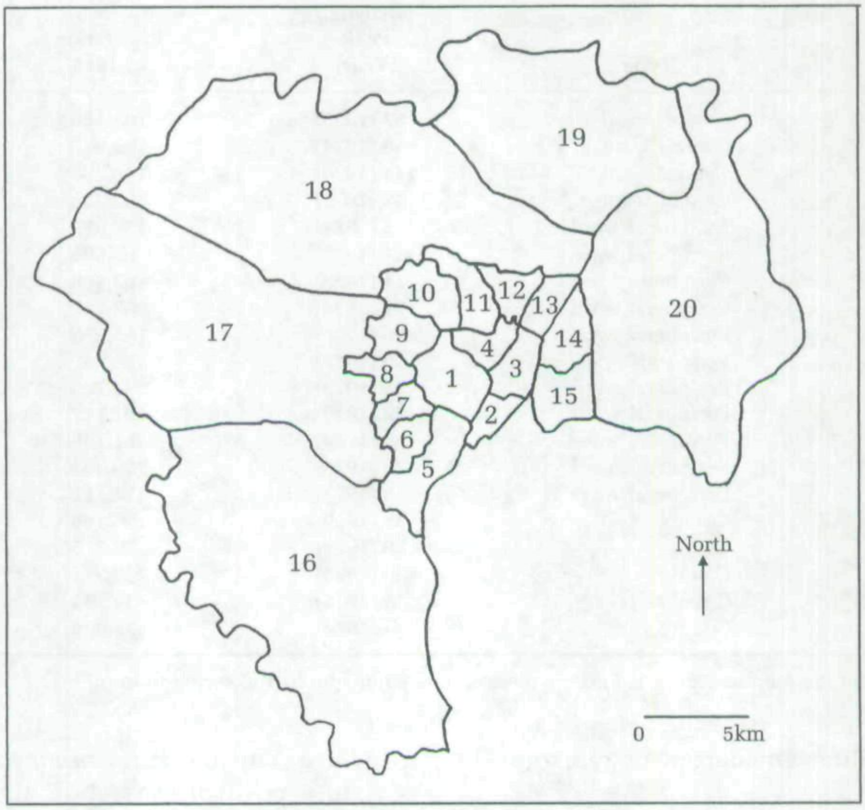
The geographical structure of metropolitan Tokyo is shown in historical maps (Tokyo Metropolitan Government, 1955). A proximity matrix of areas was coded to show which areas were adjacent to which others. Distances between locations in Tokyo, and hence the adjacency of areas, were important because the transportation system was at first quite spotty. It was improved by the establishment of train and streetcar routes that linked most of the 15 wards to each other by 1914 and later linked the counties to the adjacent wards and to each other (Tokyo Municipal Government, 1914; Tokyo Metropolitan Government, 1955). Public transportation allowed wage earners to commute to work, weakening the earlier strong link between settlement and business activity (Tokyo Metropolitan Government, 1955). Public transportation was expensive, however, and in 1906 an announced fare increase for the streetcar system led to public protests, the largest of which ended in a riot in which ten streetcars were attacked and burned (Tokyo Metropolitan Government, 1955). Clearly, people were mobile and could seek banking services outside their areas of residence, but since the transportation costs were not trivial, there was a potential advantage to locating in areas with few competitors.

Figure 1 shows a map of Tokyo with the boundaries and names of the 15 wards and five counties. These boundaries were in use until 1932, after which the counties were incorporated into the metropolitan area and subdivided. The areas were arranged roughly in three concentric circles, with 4 central wards, 11 peripheral wards, and five counties. In the southeast (between areas 16 and 20) is the Tokyo Bay; to the southwest (next to area 16) is the city of Kawasaki; in all other directions, the population outside the mapped area was sparse. The outer rim of the counties was also sparsely populated, but the inner rim (next to the peripheral wards) had a high population density. Nihonbashi, the central financial district, contained many bank headquarters and government institutions, such as the Bank of Japan and the Ministry of Finance.

Table 1 shows the type of each location (central or peripheral ward or county), the peak bank and branch density and year it was first reached, the population in 1915 (halfway through the study), and the number of branch entries in the data. The areas had populations of about 100,000 to 300,000. Because many branches were closed over the study period, often because the bank they belonged to failed, the number of branch entries exceeds the peak density for most areas. The main exception is Nihonbashi, where many banks and branches were established before 1894 and thus are not represented in the branch entry data. Most areas reached their peak density around 1925, which is after the disastrous 1923 earthquake and before the 1927 revision of the bank legislation that created stricter rules for the capital reserves of banks.

All new entries of bank branches in Tokyo by Tokyo-based banks were analyzed. Since the census was issued annually, branches that were open for such a brief time that they did not enter any of the books may not have been present in the data. In addition, I intentionally omitted the following: Entries of bank headquarters were omitted since decisions about locating headquarters most likely involve concerns that are different from decisions to locate branches. Branches that were acquired when banks merged (162 occurrences) were omitted, as it seems likely that only branches founded by a focal bank were viewed as discrete decisions. Although

FIGURE 1
Tokyo Wards and Counties



1. Kojimachi	麹町区	11. Hongo	本後区
2. Kyobashi	京橋区	12. Shitaya	下谷区
3. Nihonbashi	日本橋区	13. Asakusa	浅草区
4. Kanda	神田区	14. Honjo	本所区
5. Shiba	芝区	15. Fukagawa	深川区
6. Azabu	麻布区	16. Ebara	荏原郡
7. Akasaka	赤坂区	17. Toyotama	豊多摩郡
8. Yotsuya	四谷区	18. Kita-Toshima	北豊島郡
9. Ushigome	牛込区	19. Minami-Adachi	南足立郡
10. Koishikawa	小石川区	20. Minami-Katsushika	南葛飾郡

branch locations may have played a role when banks determined acquisition targets, other concerns (such as whether the target bank was willing to be acquired) were surely as important. Entries of branches of banks headquartered outside Tokyo were omitted, because these banks usually entered just to provide access to Tokyo-based corporate customers or regulatory agencies, and they were concentrated in a few central locations (primarily Nihonbashi). Branches destroyed in the 1923 earthquake and rebuilt in the same place were also not counted as entries.

During the study, 174 Tokyo-based banks founded 824 branches inside Tokyo. Many branches closed during this time period, including 486 of the branches in the data. These include both branches closed when a bank ceased operating and branches closed while the bank continued operating. Since the study period covered the early years of the use of the branching strategy in Tokyo, most banks remained small, and three-quarters of the observations were branches founded when the banks had 9 or fewer branches and ten or fewer years of experience with branching. The banks themselves were older, however, as they had operated as unit banks before starting branching strategies. One-half of all branching entries in the data were by banks founded in 1894 or earlier (using the

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TABLE 1
Summary Statistics per Area[a]

Area	Type	Density Peak (Year)	Population in 1915	Branch Entries
1. Kojimachi	Central ward	37 (1925)	63,156	31 (3.7%)
2. Kyobashi	Central ward	46 (1924)	163,912	49 (6.0)
3. Nihonbashi	Central ward	144 (1923)	149,393	81 (9.8)
4. Kanda	Central ward	42 (1922)	162,326	57 (6.9)
5. Shiba	Peripheral ward	32 (1924)	180,887	59 (7.2)
6. Azabu	Peripheral ward	11 (1917)	93,896	21 (2.6)
7. Akasaka	Peripheral ward	14 (1922)	63,408	25 (3.0)
8. Yotsuya	Peripheral ward	21 (1925)	62,967	18 (2.2)
9. Ushigome	Peripheral ward	16 (1923)	156,278	23 (2.8)
10. Koishikawa	Peripheral ward	16 (1922)	162,149	28 (3.5)
11. Hongo	Peripheral ward	25 (1928)	134,739	37 (4.5)
12. Shitaya	Peripheral ward	22 (1925)	191,122	29 (3.5)
13. Asakusa	Peripheral ward	36 (1924)	257,158	70 (8.5)
14. Honjo	Peripheral ward	22 (1926)	226,584	38 (4.6)
15. Fukagawa	Peripheral ward	18 (1921)	177,721	37 (4.5)
16. Ebara	County	38 (1929)	196,190	59 (7.2)
17. Toyotama	County	26 (1929)	176,775	64 (7.8)
18. Kita-Toshima	County	30 (1929)	229,372	79 (9.6)
19. Minami-Adachi	County	5 (1915)	54,584	10 (1.2)
20. Minami-Katsushika	County	4 (1924)	135,000	8 (1.0)

[a] Area numbers are from the map in Figure 1. Entry percentages may not sum to 100 owing to rounding.

date of initial founding for merged or reincorporated banks).

The focal variables are the densities of different forms of bank offices in each area, which were calculated by counting all banks and branches operating per area per year. I did not apply the exclusion rules above when computing the independent variables, so they include branches of banks headquartered outside Tokyo and branches founded before the start of the study. All variables are lagged, so they predict entries in the year following the computation year. To test Hypothesis 1, I entered these variables as linear and squared effects: *branch density* counts all branches in an area, and *head office density* counts all bank headquarters in the area. A positive linear effect and negative squared effect would indicate that a greater number of other banks and branches increased the attractiveness of an area until a point, and then decreased it, consistent with Hypothesis 1 (Hannan & Carroll, 1992). Though branches and banks could be combined into a single bank office density, they were separated here to allow each form to have different coefficient estimates. There is reason to suspect such differences, since prior research has shown that bank headquarters and branches have different competitive effects (Barnett et al., 1994).

To test Hypothesis 2, I gave each branch in an area a weight equal to its firm's size, measured as its number of branches, and summed these weights by area. This measure, *summed bank sizes,* would yield a positive estimate if the branches of large banks were more likely to attract imitations. In the diffusion literature, actors who are especially likely to be imitated are often called infectious, and my approach was equivalent to using size as a measure of infectiousness in hazard rate models of heterogeneous diffusion (Davis & Greve, 1997; Greve, Strang, & Tuma, 1995).

To test Hypothesis 3, I used the variable *own offices, same area,* a count of all offices (banks or branches) of the same bank in a given area. To test Hypothesis 4, I used the variable *own offices, neighboring areas,* a count of all offices of the same bank in areas adjacent to a focal area. (Figure 1 shows area adjacency.) Positive estimates would support Hypotheses 3 and 4.

To test Hypotheses 5 and 6, I entered the following variables: *multipoint competitors* is a count of the number of offices in an area owned by banks that a focal bank had contact with in two or more areas, and *single-point competitors* is a count of all offices in the area owned by banks that the focal bank had contact with in just one area. This measurement follows previous research on multipoint contact (Barnett, 1993; Baum & Korn, 1996). Positive estimates for these variables would show that areas with more offices belonging to banks with which a focal bank can establish a mutual forbearance relation are more attractive to the focal bank. Hypotheses 5 and 6 would thus be supported.

These variable definitions partition bank offices into those owned by banks that already have multipoint contact with a focal bank, those owned by banks that have only a single point of contact with the focal bank, and those owned by banks the focal bank had no prior contact with. These three categories (of which the third is the omitted category) and the number of offices owned by a focal bank sum to the bank and branch density of an area. Since all banks and branches were entered in their respective area densities and entered again if they were owned by a focal firm or by its multi- or single-point competitors, the total effect of an additional branch is found by adding the coefficients of linear branch density in the area and of its type (own, multi, or single). Thus, the coefficients of own, multi, or single branches and their significance tests reflect whether such branches are *more* influential than branches of the omitted category (which is branches owned by other banks that the focal bank had no prior contact with).

To test Hypotheses 7 and 8, I entered interactions of bank size (number of offices) with the momentum and forbearance variables into the model. These four interaction variables were calculated from the mean-deviated size and density variables, so the main effect coefficients can be interpreted as estimates of the momentum and forbearance behavior of a bank of average size and other covariates. Bank size itself was not entered into the model because the conditional likelihood model only estimates coefficients of covariates that differ across areas in a single choice, and bank size does not so vary.

The first control variable was area *population,* which shows the number of potential customers. I entered two variables to control for the distance from Tokyo's center, one indicating that the area was a *peripheral ward* and one indicating that it was a *county* (see Table 1). To control for differences in economic activity across areas, I entered an indicator variable for the areas Kyobashi, Nihonbashi, Kanda, Honjo, and Fukagawa. These eastern wards constituted *Shitamachi,* or the low city, which contained merchants, artisans, and small industry, and thus had a high level of commercial activity (Seidensticker, 1985: Ch. 5). Other area indicators considered for inclusion were wards to the west that had a high concentration of residences of the nobility and wards to the south that experienced rapid economic expansion (Seidensticker, 1985: Ch. 5). These indicators were found not to affect the model fit and were omitted.

Statistical Methods

The problem of locating a new branch in one of a fixed number of areas (here, 20) has the following structure. Assume that the benefit *(B)* to firm *i* from locating in an area *j* is calculated as:

$$B_{ij} = \mathrm{f}(P_j,\ C_j,\ O_j,\ O_n) + \varepsilon, \tag{1}$$

where P is the human population, C is competitor branches, O is own branches, n is neighboring areas, and ε is a disturbance term. In other words, the benefit is a function of the number of people, own branches, and competitors in the focal area and of the number of own branches in neighboring areas. Let the variables have additive effects and specify βz_j as the vectors of coefficients (β) and covariates (z) for location j. If one assumes that an organization will choose the j that maximizes B_j and that the disturbances have a Weibull distribution, this formulation leads to the conditional logit model (McFadden, 1973, 1974):

$$\Pr(Y_i = j) = \frac{e^{\beta' z_j}}{\sum_j e^{\beta' z_j}}. \tag{2}$$

An important difference between conditional logit analysis and the common methods for longitudinal analysis of organizational populations is that the conditional logit model is not suitable for analyzing variables that change over time but do not take different values for different alternatives in a given location decision. This characteristic accounts for the scarcity of control variables in the specification, as most control variables in traditional analyses of founding are related to time, including time period variables to capture important changes in institutional environment, time-varying measures of economic conditions, and other variables that are important when rates of entry are considered, but not when a choice of entry location is.

It is worth stressing the contribution this research makes by demonstrating an empirical method suitable for studying niche entry decisions. Choice analysis is an old method, and the two-alternatives version (logit and probit models) has seen extensive use in organizational research, but the conditional logit model of multiple alternatives has rarely been applied. It is a powerful tool for investigating decisions, as it directly measures how alternatives are compared. It is also a flexible tool useful for a variety of choice sets. By examining only how alternatives at a given decision point differ, it reduces the problem of controlling time-related influences that is so important in event history studies. This method lends itself well to testing predictions of how the characteristics of alternatives influence choices, and it is particularly well suited for testing decision-making theory.

An important issue in specifying the model was the definition of the alternatives. For estimation to provide meaningful results, the alternatives in the model should match the real-world decision maker's delineation of alternatives, but this is not easy to ensure when the choices are a discrete division of continuous geographical space. The main concerns are whether each alternative is bounded in the same way in the model as by the decision maker and whether the number of alternatives is sufficiently coarse or fine. The first of these is easily fulfilled. The ward and county boundaries were well-known and easy ways of ordering space during the study period, as they are today. Indeed, there seems to have been no competing system for ordering space, since the other system used by current Tokyo residents (train lines and station names) would not have functioned given the scarcity of train lines during this time period.

The problem of fineness is more difficult, as finer area delineations (towns and villages) than were used here do exist. The high number of small areas militated against using finer delineations by making it unrealistic to assume that a decision maker would have viewed them as a single choice set. In addition to the cognitive challenge of considering hundreds of alternatives, finer delineation of areas would introduce a modeling problem. Equation 2 specifies that each area's attractiveness depends on its characteristics only, not on those of other areas, and when areas are very small this assumption is likely to be invalid because small areas are close substitutes. This assumption is called independence of irrelevant alternatives (IIA), and violations can cause estimation bias but are easy to test for (Hausman & McFadden, 1984). Tests performed on the ward-level specification showed that violations of IIA were rare and were inconsequential for the hypothesis testing when they occurred. At the town level, IIA would be very unlikely to hold, as towns in Tokyo were small and directly adjacent to each other, making them close substitutes.

One might even ask whether the current definition of the choice set is too fine, as it implies that decision makers simultaneously evaluated 20 alternatives. It may indeed have too many alternatives, but a natural way to make fewer alternatives is not available. One method of analyzing data where the choice set can be defined with different degrees of fineness is nested (hierarchical response) models (McFadden, 1984), but these require prior knowledge of how decision makers structure a choice set to give meaningful results and were thus risky for these data. A coarser classification might represent an assumption that decision makers grouped areas by distance from the center (central wards, peripheral wards, or counties) or by direction (north, west, south, and east) relative to the center, but there is no basis for judging the validity of such assumptions. A nonhierarchical model with wards and counties as the alternatives thus seemed the most robust choice.

The tables show the coefficient estimates, standard errors, and tests for significance of each variable. The standard errors are heteroskedasticity-robust (Eicker, 1967; White, 1980), which is an appropriate choice for hypothesis testing as one can easily imagine area, year, or bank differences introducing heteroskedastic disturbances. For each model, the log likelihood statistic is given along with three other statistics that indicate model fit. The number of correct predictions is the number of observations for which the model predicts the alternative that was actually chosen. Since there are 20 alternatives and 824 choices, the naive model that picks at random should have 41.2 correct predictions. The R^2 is defined as usual for logistic regression, with the log likelihood test against a perfectly fitting model (G^2) substituting for the sum of squares and the naive model as a baseline (Christensen, 1997: 105). Because the choice is stochastic even with a perfect model, this statistic will depend on the observed choices and will never approach one (Christensen, 1997: 127–128). Thus, the R^2 can only be used to compare models estimated on the same data, not to compare fit across studies using different data. The value of R^2 will always increase when variables are added to the model, so a different criterion is needed to choose a parsimonious model. Here, I used Akaike's information criterion, which is also computed from the G^2 but adjusts for the number of variables in a model (Christensen, 1997: 106). A low value indicates a good fit.

RESULTS

Table 2 shows the descriptive statistics for the data, which has 824 choices with 20 alternatives each. Population is on a scale of millions, so the average is 169,000. Some correlations are high, but tests of adding or dropping one variable at a time showed no harmful effects of the high correlations. In particular, the summed bank sizes variable, which is both skewed and correlated with other variables, can be omitted without changing the results.

Table 3 shows the results of the analyses. The

TABLE 2
Descriptive Statistics and Correlations[a]

	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Population	0.17	0.16																	
2. Peripheral ward	0.55	0.50	−.26																
3. County	0.25	0.43	.47	−.64															
4. Shitamachi	0.25	0.43	−.09	−.17	−.33														
5. Branch density	14.36	13.90	.18	−.21	−.20	−.42													
6. Branch density squared/100	3.99	9.51	.03	−.25	−.13	.38	.92												
7. Head office density	5.99	11.00	−.11	−.37	−.20	.51	.72	.77											
8. Head office density squared/100	1.57	5.79	−.08	−.28	−.15	.43	.72	.80	.95										
9. Summed bank sizes	121.93	143.83	.30	−.00	−.17	.18	.58	.39	.04	.03									
10. Own offices, same area	0.40	0.87	.19	−.07	−.08	.13	.39	.30	.09	.08	.59								
11. Own offices, neighboring areas	2.11	3.47	.18	−.04	−.09	.06	.29	.17	−.03	−.03	.63	.67							
12. Multipoint competitors	2.03	2.80	.18	.04	−.15	.12	.38	.23	−.02	−.01	.69	.66	.77						
13. Single-point competitors	0.27	0.44	.13	−.03	−.09	.14	.23	.17	.18	.01	.07	.04	−.08	−.04					
14. Bank size	7.47	11.69	.24	.00	.00	.00	.21	.10	.12	−.08	.60	.66	.86	.80	−.13				
15. Size × own offices, same area	6.74	20.86	.16	−.05	−.03	.06	.23	.16	−.03	−.03	.49	.80	.62	.46	−.06	.61			
16. Size × own offices, neighboring area	35.09	88.32	.13	−.02	−.04	.02	.19	.12	−.06	−.04	.49	.59	.86	.53	−.13	.76	.72		
17. Size × multipoint competitors	26.32	46.95	.11	.01	−.10	.10	.26	.17	−.05	−.04	.58	.66	.78	.70	−.13	.79	.74	.83	
18. Size × single-point competitors	−0.64	4.29	.14	−.13	.20	−.09	−.04	.01	.00	.00	−.18	−.14	−.33	−.22	−.16	.34	−.12	−.32	−.25

[a] All correlation coefficients with a magnitude greater than .02 are significant at the .05 level.

models follow the structure of the theory: the opportunity-oriented density dependence and imitation hypotheses were tested first; then each of the two organization-level theories were entered separately; and finally, all variables were entered in the complete model 4. (The results of the tests of the interaction hypotheses are in the next table). Model 1 of Table 3 shows a positive effect of branch density and a negative effect of branch density squared, in support of density dependence among branches (Hypothesis 1). It shows a significant effect of head office squared only, so there is only partial support for density dependence from banks to branches. Though the linear effect is positive, as predicted, its lack of significance suggests that head offices may only have a negative effect on the probability of choosing an area. The coefficient estimate of summed bank sizes is positive and significant, showing that branches of large banks were more likely to be imitated (Hypothesis 2). The model predicts 72 of the 824 decisions, which is 30 more than the naive model.

Models 2 through 4 (Table 3) retain the findings on branch and head office density. In addition, model 2 shows a positive and significant effect of a bank's own offices in the same area (Hypothesis 3) and its own offices in neighboring areas (Hypothesis 4). These coefficients not only are significant but are also very large compared with the linear coefficient of branch density. There is clear evidence of momentum, as branches were located in areas where a bank was already established or in areas next to where the bank was already established. The data cannot indicate the source of the momentum, however, so I could not distinguish between momentum caused by risk aversion and momentum caused by commitment to area-specific customers and development of area-specific capabilities. If some areas were better than others, the momentum coefficient might even be influenced by organizations repeatedly locating in the superior areas, but it seems more likely that local competition would dilute such area advantages. As noted, momentum and preemption are competing hypotheses, so the finding contradicts preemption theory (Schmalensee, 1978). Model 2 shows clear improvement over the previous one in both predicted decisions and log likelihood.

In model 3, I tested the mutual forbearance hypotheses by replacing the number of own branches with the number of multipoint competitors and single-point competitors in an area. Multipoint competitors has a negative coefficient estimate, contradicting Hypothesis 5, but it is not significant.

TABLE 3
Results of Conditional Logit Models of Selection of Area for New Branch Establishment[a]

Variable	Model 1		Model 2		Model 3		Model 4	
Population	1.804**	(0.272)	1.867**	(0.282)	1.470**	(0.295)	1.467**	(0.298)
Peripheral ward	0.082	(0.179)	0.192	(0.180)	0.056	(0.178)	0.189	(0.179)
County	0.056	(0.221)	0.140	(0.222)	0.077	(0.221)	0.162	(0.221)
Shitamachi	0.023	(0.112)	0.059	(0.110)	0.033	(0.112)	0.100	(0.109)
Branch density	0.036**	(0.012)	0.026*	(0.011)	0.035**	(0.012)	0.031**	(0.012)
Branch density squared/100	−0.027*	(0.011)	−0.029**	(0.011)	−0.028*	(0.011)	−0.032**	(0.011)
Head office density	0.027	(0.017)	0.025	(0.017)	0.021	(0.017)	0.020	(0.017)
Head office density squared/100	−0.052**	(0.026)	−0.033	(0.026)	−0.043	(0.026)	−0.033	(0.027)
Summed bank sizes	0.0028**	(0.0007)	0.0019**	(0.0007)	0.0031**	(0.0007)	0.0024**	(0.007)
Own offices, same area			0.383**	(0.051)			0.402**	(0.053)
Own offices, neighboring areas			0.078**	(0.022)			0.100**	(0.022)
Multipoint competitors					−0.065	(0.044)	−0.180**	(0.045)
Single-point competitors					0.403**	(0.105)	0.368**	(0.107)
Log likelihood	−2,348.76		−2,310.94		−2,340.23		−2,298.53	
Chi-square against model 1			83.20**		14.32**		104.02**	
df			2		2		4	
Correct predictions	72		119		86		122	
R^2	0.04		0.05		0.04		0.06	
Akaike information criterion	−10,171.52		−10,256.61		−10,186.18		−10,280.07	

[a] Values in parentheses are robust (Eicker-White) standard deviations. Tests for coefficient significance are two-tailed.
* $p < .05$
** $p < .01$

Single-point competitors has a positive and significant coefficient, supporting Hypothesis 6. The results are mixed and not easy to interpret, but they could be taken as support for a theory of forbearance in which eliminating single-point competition is the main concern of strategists. This model also yields significant improvement over model 1 on the log likelihood, but all the model selection statistics imply that it is inferior to model 2.

Model 4, in which all variables are entered, generally reproduces the findings of models 2 and 3, though one difference is that the negative effect of multipoint competitors is now significant. This model is better than any of the preceding in terms of the Akaike information criterion (which is the only such criterion that does not automatically increase when variables are added) and thus seems like the best model. It predicts only slightly better than model 2, however, so one could argue that density dependence, imitation, and momentum are sufficient for predicting branch location decisions.

Table 4 shows the results of additional analyses through which I explored whether the results were influenced by the heterogeneity of firms or areas. Though the theory does not predict differences based on location, the variables may have effects that differ, so location-variable interactions were explored in model 6, which splits the coefficient estimates by whether an area was a ward or a county. The counties were part of the Tokyo prefecture, but not of the city, until 1932 and, even though they had high populations and clearly were integrated with Tokyo economically, they may have been viewed as less promising places for banking. Experimentation with different ways of splitting the coefficient estimates confirmed this suggestion, as separate coefficients between counties and wards was the only way to improve on model 4 without adding many coefficients. Model 5 shows that the human population had a greater attractiveness to banks in the wards than in the counties, which probably reflects the banks' slowness in taking advantage of the population growth in the counties. In this model, the density variables are rather collinear and their coefficients for the counties do not estimate well, as seen by the high standard errors. The predictions of this model are only moderately better than those of model 4, which has five fewer coefficients. Thus, area differences do not appear to be important.

This conclusion is reinforced by model 6, which includes a covariate to measure wealth differences among areas. The tax-assessed property value of each area was recorded in the *Tokyo Statistical Yearbook* and seems to provide a valid measure of individual wealth and commercial activity in the

TABLE 4
Results of Conditional Logit Models of Selection of Area for New Branch Establishment[a]

Variable	Model 5: Wards	Model 5: Counties	Model 6	Model 7	Model 8
Population	3.878** (0.959)	1.245† (0.628)	1.540** (0.304)	1.434** (0.300)	1.321** (0.426)
Peripheral ward	−0.123 (0.191)		0.146 (0.182)	0.231 (0.179)	0.291 (0.233)
County		−0.939* (0.338)	0.165 (0.222)	0.266 (0.221)	0.482† (0.279)
Shitamachi	0.029 (0.112)		0.062 (0.111)	0.095 (0.109)	0.161 (0.147)
Area property value			0.435† (0.248)		
Branch density	0.026† (0.014)	0.014 (0.036)	0.030** (0.011)	0.030** (0.012)	0.022 (0.015)
Branch density squared/100	−0.017 (0.012)	−0.063 (0.106)	−0.034** (0.011)	−0.032** (0.011)	−0.036* (0.015)
Head office density	0.001 (0.018)	0.649** (0.204)	0.009 (0.019)	0.018 (0.017)	0.022 (0.022)
Head office density squared/100	−0.014 (0.028)	−6.159* (3.036)	−0.020 (0.028)	−0.034 (0.027)	−0.018 (0.034)
Summed bank sizes	0.0010 (0.0010)	0.0041** (0.0010)	0.0021** (0.0007)	0.0029** (0.0007)	0.0026* (0.0010)
Own offices, same area		0.411** (0.053)	0.409** (0.053)	0.635** (0.069)	0.508** (0.085)
Own offices, neighboring areas		0.094** (0.022)	0.101** (0.022)	0.223** (0.037)	0.170** (0.041)
Multipoint competitors		−0.176** (0.046)	−0.179** (0.045)	−0.202** (0.059)	−0.103 (0.069)
Single-point competitors		0.384** (0.109)	0.370** (0.108)	0.289** (0.111)	0.326* (0.141)
Size × own offices, same area				−0.015** (0.003)	
Size × own offices, neighboring area				−0.006** (0.001)	
Size × multipoint competitors				0.003 (0.003)	
Size × single-point competitors				−0.010 (0.008)	
Log likelihood	−2,283.61		−2,297.00	−2,276.99	
Correct predictions	130		127	139	
R^2	0.06		0.06	0.06	
Akaike information criterion	−10,301.27		−10,281.24	−10,319.88	

[a] Values in parentheses are robust (Eicker-White) standard deviations. Tests for coefficient significance are two-tailed.
† $p < .10$
* $p < .05$
** $p < .01$

wards. It correlates with the number of nonbank corporations in each area (0.7), another variable coded from the *Tokyo Statistical Yearbook,* and is high in areas known to have had many wealthy residents (Seidensticker, 1985). This measure was not available for the counties, however, since these were outside the city limits. Omitting county observations would have been an undesirable truncation of the data, so instead the property value measure was imputed as x times the mean (peripheral ward property value), where x varied from 0.50 to 1.00. The counties were less wealthy than the wards, so these values should bound their true real estate value. The value of x affected the coefficient estimate of the real estate value and the log likelihood (both were greater when x was closer to 1.00) but did not affect the estimates of the variables testing hypotheses, so the procedure was deemed safe. Model 6 uses the intermediate value of x, 0.75, and shows that all conclusions from model 4 are retained. Model 6 has slightly better explanatory and predictive power than model 4, but its main merit is in showing that the findings are robust to the inclusion of a wealth covariate.

In model 7, the test of Hypotheses 7 and 8, interactions of firm size are entered with the momentum and mutual forbearance variables. The interactions of firm size with own offices in the same or neighboring areas are negative and significant, showing that decision-making momentum is lost as banks grow (Hypothesis 7). The number of own offices in the same area and the number in neighboring areas have significantly greater coefficient estimates for small banks than for large. The interactions of firm size with multipoint and single-point competitors are not significant, however, so there is no evidence that forbearance behavior is moderated by firm size. Model 7 predicts entry location better than any of the others, suggesting that firm size differences cause heterogeneity in market entry decisions.

Finally, in model 8, I employed weighting to account for simultaneous entries of branches. This was done because banks sometimes added more than one branch in one year and, since these choices were most likely considered jointly, the observations may be statistically dependent. Correcting for this was not easy since the form of dependence was not known, and the safest form of correction (deleting all) would have used the data poorly. One approach to such problems has been to weight all observations for one firm in one year by the number of observations the firm has in a year, which reduces the effect of the dependence but does not remove it (Barnett, 1993). Such a weighting scheme is clearly possible, but another option, made possible by increased computing speed, is to randomly draw observations with an inclusion probability equal to the inverse of the number of bank observations in a year. This can be done repeatedly, thus making the expected number of each firm's choices one but allowing the actual choices to differ in each data set. The dependence is greatly reduced by this method, as the dependent observations are unlikely to simultaneously occur in a given data set. As an added bonus, a high number of repetitions (1,000 were run) allows an alternative estimate of the standard error of each coefficient by computing the standard deviation of its estimate across runs.

These estimates were computed and compared with the mean Eicker-White standard errors, and since they were smaller (less conservative), the table reports the mean Eicker-White standard errors for model 8. Since the observations were drawn without replacement, each data set analyzed is smaller in model 8 than in the others, which increased the standard errors. The coefficient estimates of this model support mimetic entry (Hypothesis 2), momentum from prior office establishments (Hypotheses 3 and 4), and entry in areas with single-point competitors (Hypothesis 4). The branch density variables have coefficient estimates similar to their earlier ones, but the linear term loses its significance (Hypothesis 1). Thus, the mimetic and momentum variables perform well in all tests, but the density variables lose significance when coefficients are split among areas or simultaneous entries are dropped. Since both of these specifications have fewer observations per estimated coefficient, this loss of significance could be due to loss of statistical power.

DISCUSSION

This study showed that the early Tokyo banks based choices of niches of new branches on contemporaneous opportunities and organizational experience. The density of branches showed the predicted inverted ∪-shaped relation with the probability of choice. This finding is consistent with prior density dependence studies, but it extends them, because prior studies have analyzed the rate of entry over time instead of the choice of area at each time point. The study also provides clear evidence that the decisions of large firms were imitated, in support of institutional theory. Past location decisions were repeated or varied slightly, consistent with decision-making momentum. Banks established additional points of contact with single-point competitors as mutual forbearance theory predicts but, surprisingly, did not do so with multipoint competitors. This finding suggests that strategies to influence the future behaviors of competitors were less prominent in the decision making than contemporaneous opportunities and experiential learning.

Generality and Limitations

Since these findings are drawn from a specific organizational population and era, it is worthwhile examining whether these choices influence the generalizability of conclusions. Banks were selected for study because they are cornerstone organizations for national and local economic development, location is important for capturing customers, and regulatory requirements ensure complete data coverage and good location data. Banks are an old organizational form, however, so a study of the decisions made early in their evolution faces data limitations on other covariates, such as the economic conditions of each area. Though attempts to capture such heterogeneity suggested it was small, the possibility of omitted variable bias cautions against overly strong interpretations of the findings. A natural extension of this research would be to choose a population in which richer measures of environmental opportunities could be obtained.

A limitation of this study is that the behavior of organizations may change with accumulated experience and that strategic behaviors, in particular, will appear later. This is a good reason to study these hypotheses on more experienced organizations to test whether the findings generalize. Also, logistic cost concerns may affect the niche entry decisions of organizations that produce or distribute a physical good. A service industry was deliberately selected for study to avoid a cost-based interpretation of the hypothesized momentum effects, so the most likely difference would be stronger momentum. How this would affect density dependence, imitation, and mutual forbearance is less clear and should be investigated.

The generality of these findings can be assessed by establishing theoretical boundary conditions and comparing the findings with those of studies using different methods to examine the same theories. Theoretical boundary conditions suggest that organizational forms should have a choice of niches to enter, should view the niche decision as consequential for their funding, and should enter niches by establishing their own businesses. This formulation excludes organizations that are mandated to serve specific niches, organizations whose resources are not tied to their niches, and organizations that enter niches through acquisition. The reason for the last boundary condition is that organizations that enter a niche through acquisition are likely to be guided at least in part by the availability of acquisition partners, and this was also the reason for omitting acquired branches from this study.

Many of these findings are cross-validated by prior research using other study populations and methods, as noted earlier. The weakest findings were those for the hypotheses predicting that organizations seek to establish mutual forbearance networks, and these are exactly the hypotheses with the shortest empirical records (e.g., Baum & Korn, 1999). The major weakness of the empirical record on density dependence, imitation, and momentum is that most evidence so far has been from U.S. organizations, raising doubts about whether the different institutional and economic conditions, management training, and cultures of other nations may cause different behaviors. This study joins a few others in showing that these theories are generalizable beyond the U.S. context (Amburgey, Kelly, & Barnett, 1993; Freeman & Lomi, 1994; Hannan et al., 1995).

Theoretical Implications

The findings have interesting implications for the development of each theory tested. Finding support for density dependence may not seem surprising, as this theory has been supported in many studies (Baum [1996], Carroll [1997], and Hannan and Carroll [1992] provide recent reviews). The support has not silenced critics, who have noted that tests of density dependence rely on temporal variation of this measure during the history of an organizational population, and thus support could result from time-varying unobserved constructs such as heterogeneity of observations (Petersen & Koput, 1991) or from other social mechanisms (Baum & Powell, 1995). Nor are the theory's proponents completely satisfied, as it cannot fully account for the fall in density seen in old organizational populations (Barnett, 1997; Hannan, 1997). Showing effects of local density on the selection of organizational location makes two contributions. First, support for density dependence in an analysis of cross-sectional differences makes it much harder to argue that changes over time of unobserved constructs drive the results. Second, finding population interaction at the local level suggests that some of the competition among organizations takes place at a lower level than that defined by the usual population boundaries, and further investigation of local competition may explain the fall of density. Local density dependence will cause organizations to settle in small regional patches, and increased failure within the patches and an absence of founding between the patches (both results of local density dependence) will cause the total population density to fall below its theoretical maximum. Recent work has included measurement of density dependence at different levels of analysis (Carroll & Swaminathan, 1992; Sorenson & Audia, 1998) and models of competition based on local interactions (Lomi & Larsen, 1996), and these developments should be encouraged by the results of this study.

Evidence that size is a criterion for selecting targets of imitation is consistent with prior research on institutional theory (Haunschild & Miner, 1997; Haveman, 1993). It reinforces the cognitive basis of institutions (Scott, 1995) by showing that imitation is not homogeneous but, rather, is guided by decision makers' ability to observe others and judgments about which other organizations are most relevant to their situations (Greve, 1998a). Mimetic isomorphism can result when initially different small organizations look to large organizations for clues on what behaviors are normal for a large organization and, by imitating those behaviors, become more homogeneous. In this case, the organizations' resource deployment across market niches, an important strategic action, was spread mimetically.

The smaller body of empirical work on decision-making momentum is still impressive because the hypothesis has received clear support in studies using multiple methods and study populations (Amburgey & Miner, 1992; Christensen & Bower, 1996; Greve, 1996; Kelly & Amburgey, 1991; Miller & Friesen, 1982; Noda & Bower, 1996). It supports the contention that organizations will commit to a course of action on the basis of limited experimentation with alternatives (Herriott et al., 1985; March et al., 1991), so reduced search and risk taking for organizations with satisfactory performance leads to missed opportunities in benign environments. This study is distinct in using analysis of the selection among alternatives rather than analysis of the rates of similar events, and it thus helps answer whether momentum is caused by repeated choice of a successful alternative (Herriott et al., 1985) or increased rates of making the same decision (Amburgey & Miner, 1992). The evidence here shows that repeated choices are important but cannot rule out an additional role of increased rates of making a decision.

The evidence on mutual forbearance is inconclusive, but a fair interpretation seems to be that there was weak support for a deliberate search for multipoint contacts. This weak support may be due to data limitations, as organizations may have started building multipoint contact networks after the study period ended. Even this limited interpretation of the findings suggests that the theory may need modification. Forbearance relies on firms having both enough experience to understand how competitors can be influenced and the ability to influence them, so the theory of forbearance may be inappropriate for young and small organizations. The generality of theoretical treatments in which it is assumed that the structure of a market alone can determine the exercise of mutual forbearance may thus be limited (e.g., Bernheim & Whinston, 1990).

The findings of this study can be integrated by recalling two behavioral rules from the Carnegie model of organizational search (Cyert & March, 1963: Ch. 6): According to this model, (1) managers will first search for alternatives using the information easily available to them and will expand the search when this information is insufficient, and (2) managers will take uncertainty into account when evaluating alternatives and will avoid highly uncertain alternatives. These behavioral rules are often used when organizations make uncertain decisions (Cyert & March, 1963; Hansen, 1999; Levinthal & March, 1993; Stuart & Podolny, 1996) and clearly were at work in the location decisions examined here. The banks had most easily available and certain information on locations near their current branches, and they strongly favored such locations. They had less available and certain information on locations where other banks operated and favored such locations slightly less. Least available and certain was information on the future actions of competitors, making mutual forbearance difficult. The different strength of findings thus reflects simple rules of the proximity of managers to information and shows a temporal bias favoring the well-known present over the past or future. The past is influential when it has current consequences, however, as when past location decisions create a branch network that selectively collects and transmits information (Greve, 1996, 1998a). These findings underscore the importance of local and myopic search for organizational decision making.

Future research should seek to replicate and extend this work by examining location decisions made in other competitive contexts, focusing on recent data and on mature industries. Evidence of local search patterns in experienced organizations and industries would be a very strong finding. There is also good reason to extend this research beyond geographically delineated niches. It would be valuable to combine these hypotheses with research on cognitive maps of industries (Porac & Rosa, 1996) to see if local search affects entry into niches that are cognitively close, just as it affects entry into niches that are geographically close. Such investigations would extend cognitive mapping research by linking it with behavioral predictions on important outcomes and would be a very valuable contribution. This theory should also be tested with detailed data on how managers collect and evaluate information, so that the organizational routines causing these decisions can be uncovered.

Managerial Implications

Managers have clear incentives to make correct niche entry decisions, as niche location is highly consequential for organizational performance and survival (Baum & Mezias, 1992; Bigelow, Carroll, Seidel, & Tsai, 1996; Carroll & Wade, 1991; Hannan et al., 1995; Ingram & Inman, 1996; Lomi, 1995). Branch networks also provide exposure to different competitors and opportunities for learning routines that can be transferred within an organization (Bradach, 1997; Greve, 1999; Ingram & Baum, 1997; Porter, 1990: 53–60). With so much at stake, it is a concern that decisions based on easily available information can lead to missed opportunities. To reduce this opportunity cost, managers should occasionally apply nonroutine and wide information collection when new niches are entered. Deliberate divergence could have high returns precisely because organizations do so often use local search, leaving some resource niches unexplored. Similarly, local search allows managers to anticipate the future location decisions of their competitors on the basis of their current branch locations and to take these decisions into account when making their own strategies. When simple decision rules are widespread, the rewards of sophisticated decision making are high.

The findings also have implications for local competition and economic development. Density dependence, mimetic entry, and momentum all yield positive path dependence in niche entry, leading to a patchy distribution of organizations in which areas with an early lead will see this lead strengthened. Through this process, the early concentration of banks in the Nihonbashi ward of Tokyo led to its becoming a financial center that still exists 100 years later. Though it currently houses money-center banks whose transactions sometimes benefit from proximity to other banks, this center evolved from a population of retail banks and branches that reaped no benefit from their proximity to competitors. The concentration grew out of path-dependent decision making, and its advantages were discovered later. Path-dependent learning from others and from themselves is frequent when new organizational forms move into market niches (Aldrich & Fiol, 1994), and it can occur in the absence of any advantages of concentration (Sorenson & Audia, 1998). Local concentrations of one form of organization are thus a likely consequence of an initial seeding of organizations that attract imitators.

Conclusion

I have shown that the study of niche entry decisions is fruitful for comparative testing of hypotheses drawn from different organizational theories. These decisions are consequential and easy to measure and analyze, and they provide important evidence on how managers weight different concerns when making decisions under uncertainty. I have demonstrated a method for such research that can easily be used and extended to different kinds of decisions. I have also shown that important theories of the strategic behavior of organizations perform well even when applied to a different outcome than their traditional formulation has contained, so they generalize readily. This research is thus well connected with existing theory and research and with exciting future research opportunities.

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