

# Competition Among Franchises, Company-Owned Units and Independent Operators: A Population Ecology Application

Bruce K. Pilling  
Steve W. Henson  
Boonghee Yoo

**SUMMARY.** Population Ecology, as a dynamic model of competition, is applied to the study of franchise systems. The paper examines competition among populations of franchises, company-owned units, and independent operators, the relative responsiveness of each population to changes in its environment, and the impact of level of market demand and population density on each population. Census data from two sources, *Franchising in the Economy* and the *Census of Retail Trade*, are analyzed using Population Ecology methodologies. Directions for future research efforts are provided.

## INTRODUCTION

An important focus of franchise research has been the various distribution forms adopted by franchise systems. Specific research

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Bruce K. Pilling is Assistant Professor of Marketing, and, Steve W. Henson and Boonghee Yoo are Doctoral Candidates, all at the Georgia State University, Atlanta, GA 30303.

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has sought to uncover the reasons for differing distribution configurations (Brickley and Dark 1987); to understand shifts in these configurations (Oxenfeldt and Kelly 1968-69); and to examine the impact of a given configuration on performance and managerial issues (Norton 1988a). The purpose of the current research is to examine competition in franchised versus non-franchised populations based on a Population Ecology (Hannan and Freeman 1977) perspective. Population Ecology, as a model of competition which applies a biological analogy to the study of organizational form, is well-suited to an examination of types of organizational forms and shifts between various forms (Boeker 1991).

#### ***POPULATION ECOLOGY: A MODEL OF COMPETITION***

The Population Ecology framework represents a point of departure from past research on franchise systems by providing a different perspective on both organizational form and competition among organizational forms. As a Darwinian model of competition, the characteristics of a competitive arena at any given time are a result of "survival of the fittest." Populations which have outcompeted rivals will dominate, particularly in that niche for which they are best suited. To a population ecologist, competition is not between individual organizations, but between organizational types (referred to as populations.) The current research applies Population Ecology logic and methodology to the study of franchise systems by comparing franchises (as a population) separately with company-owned franchise units (as a population) and independent operations (as a population). The object is to understand the effects of competition and environmental conditions on each organizational form and also to examine the suitability of each organizational form to its environment.

Population Ecology focuses on the relative ability of organizational forms to compete for the resources necessary for survival. Environmental characteristics and competition are seen as exhibiting an interactive effect on the success or decline of an organizational form. Environmental change will modify competitive dynamics since the expansion of one type of organizational form may decrease the resources available to other populations of organiza-

tions (Hannan and Freeman 1977.) As a biological analogy applied to populations of organizations, the basic premise of organizational ecology can be stated as "the species best fitted to the contingencies of the environment will survive and prosper and their less fit rivals will fail and disappear because of their inability to secure adequate resources" (Lambkin and Day 1989, p. 9).

### ***STRATEGIC INSIGHTS FROM POPULATION ECOLOGY***

The Population Ecology literature identifies various organizational forms that are well-suited to compete for resources in specific competitive environments. Hannan and Freeman (1977, p. 935) define form as a "blueprint for organizational action" shared by a number of organizations. A population, therefore, is the collection of all organizations within a form (Carroll 1984.) The basic notion is that a specific competitive environment will favor a certain organizational form over other forms. These forms have analogues in the strategy literature (Boeker 1991.) As an example, Population Ecologists describe firms that are first to enter a new market as r-strategists (Brittain and Freeman 1980.) From the management literature, Miles and Snow (1978) would classify r-strategists as prospectors. Firms are also classified by their degree of product diversity; market specialists compete in only one or a very few markets simultaneously. Porter (1980) would label specialists as following a focus strategy. In turn, the relative success of a given strategy will be determined by the fit of that strategy to its environment.

Organizational ecologists have developed a number of modeling techniques specifically designed for industry analysis (see Tuma and Hannan 1984 for an in-depth review). These techniques are somewhat varied, but most share three characteristics. First, the techniques are non-stochastic. Models are based on populations, not on samples. Second, models are often fitted with secondary data. This usually means that compromises between constructs and measures occur. Finally, the models are dynamic. Since most secondary data are periodic, ecologists have developed models which approximate continuous change over time.

## FRANCHISING

The application of Population Ecology to franchising permits the assessment of the relative ability of franchised versus non-franchised units (as populations) to compete. Population Ecology emphasizes a dynamic perspective on competition, which includes the ability of a population to adapt to changes in its environment, an important dimension of competitive advantage (Day and Wensley 1988). Population Ecology also offers an alternative explanation to the redirection theory (Oxenfeldt and Kelly 1968-1969). Changes in the proportion of franchises in a franchise system may be the result of natural selection processes rather than managerial decisions to repurchase franchises. This explanation would be testable given availability of data at the franchise chain level.

Franchising represents an attractive setting for investigating the effects of competition among organizational forms. Prior research which has examined the rationale for franchising, the configuration of franchise systems as well as shifts in configurations, and related performance issues provides a base for additional research and also signifies the importance of this line of inquiry. Second, different organizational approaches to franchising represent different populations, which are amenable to Population Ecology research. The current research will examine differences between franchises (as a population) compared separately with two other populations; company-owned units and independent operators.

### *Responsiveness*

A key strategic variable is the ability of an organization to respond to changes in its environment (Lambkin and Day 1989). This section examines the hypothesized responsiveness of franchises, compared with both company-owned units and independent operators, to environmental change.

Compared with *company-owned outlets*, franchises (as a population) are generally believed to be more responsive to changing market conditions. For example, the ability to rapidly expand an operation through franchising is associated with the following variables: (1) access to the capital necessary for expansion; (2) as a source of ready managerial talent; and (3) available knowledge of

local market conditions, including site selection (Oxenfeldt and Kelly 1968-1969.) Agency theory provides additional rationale to explain the suitability of franchises in high growth markets. The agency problems of monitoring and controlling individual outlets can be offset by shared ownership with franchisees, since a franchise arrangement provides incentives to motivate the franchisee. These outcomes lessen managerial constraints which could otherwise impede system growth. In addition, the franchisee may share positive characteristics with entrepreneurs (Weinrauch 1986), is more familiar with local market conditions (Lafontaine 1992), and enhances the ability of the system to adapt to local conditions (Norton 1988a.) Therefore, when compared to company-owned units, we expect franchises, as a population, to expand more rapidly during growth periods.

H1: Franchises, as a population, will exhibit greater responsiveness to their environment than company-owned outlets. Specifically, franchises will expand more rapidly than company-owned outlets during periods of high market growth.

Compared with the *population of independent operators*, franchises are also hypothesized to be more responsive to changing market conditions. This belief is based on two characteristics of franchise systems. First, the expansion of franchises, as a population, benefits from the programmatic assessment of market growth opportunities. This is because franchise systems adopt a systematic approach to expansion. A franchise system will in general have procedures in place to monitor its environment, to assess local markets in a methodical fashion, and to expand when market opportunities are identified. Also, the franchise system may actively advertise for new franchises and will also receive unsolicited inquiries from potential franchisees as the system grows. Second, system growth involves the replication of a "proven" business format (Justis and Judd 1989.) This tested concept will often involve, in addition to the product offering, operational manuals, employee training, accounting systems, assistance in purchasing and inventory control, and a recognizable brand name. These two characteristics are predicted to better equip franchises (as a population), compared to independent operators, to take advantage of market growth op-

portunities. Growth in the non-franchised population will, in general, be due to the actions of entrepreneurs who respond to their own evaluation of perceived market opportunities. Independent operators, as a population, approach market opportunities more haphazardly, will not benefit from a proven market concept, may find it more difficult to acquire the necessary financing resulting in undercapitalization, and will tend to encounter more significant day-to-day operational difficulties.

H2: Franchises, as a population, will exhibit greater responsiveness to their environment than independent outlets. Specifically, franchises will expand more rapidly than independent outlets during periods of high market growth.

### *Competition Between Populations*

In the Population Ecology model populations of franchisees and non-franchised units will compete if a change in the size of one population diminishes the sales potential of the other population. Different organizational forms are viewed as competitors to the extent that they vie for the same resource base. Competition between populations of organizations will be high when resources are limited, as in established industries (Lambkin and Day 1989). We do not provide hypotheses relating to competition beyond the general expectation that franchises will compete, at the population level, with both company-owned units and independent operators; however, our analytical approach will enable us to describe the nature of the competitive relationship.

## *METHOD*

### *Analysis*

The hypotheses were tested by a model of the carrying capacity of the environment (Tuma and Hannan 1984), which estimated the effect of competition between populations and changes in environmental resources (population density and market demand) on the respective populations and their response rates to environmental

change. This approach relies on a linear partial adjustment model and has been used to assess competition by Boeker (1991) in the brewery industry, by Nielson and Hannan (1977) in education organizations, and Hannan and Freeman (1978) in personnel departments in schools. The effects of competition between populations for resources and the impact of the environment are summarized in the following model.

### *Model of Carrying Capacity*

Carrying capacity, measured as sales volume, is determined by both competitors' capabilities and environmental conditions.

$$X_{ij}^*(t) = f(X_{ik}(t), E_{ij}(t), u_{ij}(t)) \quad (1)$$

where

$X_{ij}^*(t)$  = carrying capacity of the  $i$ th state for  $j$ th type of business organization (franchises or company-owned outlets.)

$X_{ik}(t)$  = competing organizations' carrying capacity or current sales volume

$E_{ij}(t)$  = environmental conditions

Under assumption that (1) is a linear function, (1) can be rewritten as follows:

$$X_{ij}^*(t) = \alpha'_j + \gamma'_k X_{ik}(t) + \delta'_j E_{ij}(t) + u_{ij}(t) \quad (2)$$

where

$\alpha'_j$  = parameter of constant cultural, political, and infrastructural conditions that affect the carrying capacity of the  $j$ th type of organizations

$\gamma'_k$  = parameter of competitiveness to the  $k$ th competing organizations. The value can be positive, negative or zero. When  $\gamma'_j$  and  $\gamma'_k$  are both negative, the forms compete

with each other. When both  $\Upsilon'_j$  and  $\Upsilon'_k$  are positive, this is termed a symbiotic relationship (Boeker 1991), where an increase in one form leads to an increase in the carrying capacity of the other.

$\delta'_j$  = parameters of environmental conditions. In our model we examine two environmental conditions—market demand and population density. The higher the values, the more favorable to the organizations.

***Speed of Response (Linear Partial Adjustment Model)***

$$X_{ij}(t) - X_{ij}(t - \Delta t) = \beta'_j (X^*_{ij}(t) - X_{ij}(t - \Delta t)) \quad (3)$$

where

$\beta'_j$  = speed of a population's response to changes in its carrying capacity, which generally has a range of zero to one. When the parameter is one, the  $j$ th organization adjusts perfectly to the change in its environment (an absence of structural inertia). When  $\beta'_j$  is zero, the population does not adjust at all. In operational terms, the responsiveness parameter indicates the "fraction of the required adjustment that is made in the time unit specified" (Boeker 1991, p. 624). In this study  $\beta'_j$  is the proportion of the gap that is made up each 5 years for the *Retail Census* data. For *Franchising in the Economy*,  $\beta'_j$  refers to a 1 year time period.

The substitution of (2) into (3) makes the following equation:

$$X_{ij}(t) - X_{ij}(t - \Delta t) = \beta'_j (\alpha'_j + \Upsilon'_k X_{ik}(t) + \delta'_j E_{ij}(t) + u_{ij}(t) - X_{ij}(t - \Delta t))$$

Thus,

$$X_{ij}(t) = \alpha'_j \beta'_j + (1 - \beta'_j) X_{ij}(t - \Delta t) + \beta'_j \Upsilon'_k X_{ik}(t) + \beta'_j \delta'_j E_{ij}(t)$$

Finally, the model is completed as follows:

$$X_{ij}(t) = \alpha_j + \beta_j X_{ij}(t-\Delta t) + \gamma_k X_{ik}(t) + \delta_j E_{ij}(t) \quad (5)$$

where

$$\begin{aligned} \beta'_j &= 1 - \beta_j \\ \alpha'_j &= \alpha_j / \beta'_j \\ \gamma'_k &= \gamma_k / \beta'_j \\ \delta'_j &= \delta_j / \beta'_j \end{aligned}$$

where

$$\beta_j = \text{inertia parameter}$$

Equation 5 is the final regression equation, with  $\delta_j E_{ij}(t)$  capturing the impact of two environmental factors, population density and demand.

#### *Log Transformations and Dummy Variables*

Two possible problems can occur because of our use of a pooled time-series of cross-sectional data: autocorrelation and heteroscedasticity. The error terms,  $\delta_j E_{ij}(t)$  in (5), can be decomposed into two parts of random error, one part which is constant over time, and history errors, which are different by time period and transferred to next time period, resulting in autocorrelation. To avoid a bias in our fundamental parameters, we created dummy variables by time period. To eliminate heteroscedasticity, we used a log transformation of the data. This approach appears to match the characteristics of our data (Nielsen and Hannan 1977).

#### *Data and Measures*

The hypotheses and other relationships were tested in two separate data bases. This approach, while perhaps increasing the difficulties of comparing results between the two data sets, significantly increases the insights provided by the research. We wish to provide

those insights and will acknowledge challenges and unresolved issues where appropriate. The analytical approach was identical for both data bases. The comparison of the population of franchises against the population of company-owned outlets was conducted by analyzing *Franchising in the Economy*, published by the U.S. Department of Commerce, International Trade Administration. Data were analyzed for 14 industries,<sup>1</sup> from 1969 through 1987, providing 266 industry data points. The use of census data is commonplace in population ecology research and has also been used by franchise theorists (e.g., Norton 1988A, 1988B.)

The comparison of the population of franchises against the population of independent operators<sup>2</sup> was conducted in "eating out" industries for the period 1972 to 1987 (SIC 5812, *Census of Retail Trade*). It is published every five years, providing four data points; 1972, 1977, 1982, and 1987. Data were analyzed separately for two industries within SIC 5812: (1) restaurants and lunchrooms and (2) refreshment places. Data were available for both franchised and non-franchised retail operations, by state, for both dollar sales and number of establishments. Based on the discussion in footnote 2, we will treat the non-franchised operations as independent opera-

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1. Automotive products and services; Accounting, credit, collection agencies and general business systems; Employment services; Printing and copying services; Tax preparation services; Construction, home improvement, maintenance and cleaning services; Convenience stores; Educational products and services; Restaurants (all types); Gasoline service stations; Laundry and drycleaning services; Recreation, entertainment and travel; Retailing (non-food); and Soft drink bottlers.

2. A franchise is defined as an operation which operates under a franchise relationship. Non-franchised units include, therefore, company-owned units as well as independent refreshment places. By comparing this data set with the Franchising in the Economy figures, we were able to determine the approximate breakdown of the non-franchised category between company-owned units and independent operators. Both data bases report about the same number of franchised units in the restaurant industry; for 1985, 47,358—*Franchising in the Economy* and 46,118—interpolated from the *Retail Census*. From the restaurant category in *Franchising in the Economy*, we can establish the percent of total units that are company-owned, about 32%, or 21,198 units in 1985. Assuming the same number of company-owned outlets in the *Retail Census* data, this suggests 10% of non-franchised units are company-owned outlets ( $21,198 / 222,195 = 9.9\%$ .)

tors, while recognizing that about 10% of the units in this category are company-owned.

From *Franchising in the Economy*, we analyzed annual sales data from 1969 to 1987 at the national level for fourteen industries, yielding 266 data points. From the Retail Census, we extracted two industries at four time periods, for fifty states (providing 200 state years of data for each industry.) *Franchising in the Economy* provides a test of the Population Ecology framework at the aggregate or national level, with data collapsed across both states and industries. The *Retail Census* data permits the test at the state level, separately for each of two industries. Other researchers have examined structural issues in franchise systems at the state level (e.g., Norton 1988b). Also, the *Franchising in the Economy* data base is restricted to either franchises or company-owned outlets, while the *Retail Census* data is broken out by franchised and non-franchised outlets (about 90% of which are independent operators).

### *Variables*

The dependent variable in our study was the total size of each population, measured as sales volume, for each data point. For the *Retail Census* data, this information is available for both industries by state for each year of the study (1972, 1977, 1982, and 1987). For the *Franchising in the Economy* data base, sales volume is available for each year of the study for each industry at the national level. Sales data were converted to constant dollars using the Consumer Price Index as the deflator. Our independent variables were population density, total demand and competing population sizes. *Population density* refers to the number of organizations in a given environment. As the number of organizations per capita increases, competition for resources will increase. This is because a greater number of organizations are competing for a limited resource base. In calculating population density, it was necessary to control for the resource base—in this case population. Therefore density was measured as the total number of outlets per state (both franchises and non-franchised units), divided by each state's population for the *Retail Census* data. For *Franchising in the Economy*, this measure was calculated as the number of retail trade establishments per one thousand people in the U.S.

*Total demand* is a measure of the overall resource base for which populations compete. Therefore increases in total demand are believed to positively influence the carrying capacity of the environment, in terms of its ability to support population growth. For the *Retail Census* data, total demand was calculated as the percent of national buying power which resides in each state multiplied by total U.S. retail sales for each of the four time periods. The Buying Power Index, published by *Sales and Marketing Management*, was used as a measure of each state's buying power, and we used the *Census of Retail Trade* to provide total U.S. retail sales. For *Franchising in the Economy*, demand was measured as total U.S. retail trade sales.

*Competing population size* refers to the current sales volume of competing populations. The variable reflects the effect, on one population, of an increase or decrease in the sales volume of another population. The coefficients which capture the nature of competition between franchisees, company outlets and independent operators, as well as their respective response rates to environmental change, are provided as outputs when the model is estimated.

## RESULTS

### *Hypothesis 1 and 2*

Table 1 presents the results of the linear partial adjustment model for both data bases. The results will be discussed as they relate to each hypothesis.

The first hypothesis predicted that the franchise population would be more responsive to changes in its carrying capacity than company-owned units. The responsiveness coefficients support this hypothesis. Hypothesis 2 examined this same relationship between franchises and independent operators. As predicted, franchises were more responsive to their environment than independent operators in both industries. The difference in the refreshment industry is quite pronounced, with franchises adapting at over twice the rate of independent operators. Responsiveness in the refreshment industry is higher than in the restaurant industry, for each organization form. The responsiveness coefficients capture the relative speed with

TABLE 1. Parameter Estimates of the Dynamic Model

	Franchising in the Economy Data			Retail Census Data		
	Franchises		Company-Owned	Refreshment Places		Restaurants
	Franchises	Company-Owned	Franchises	Independent Units	Franchises	Independent Units
Constant	-28.1	-81.0	3.162	3.792	5.136	.458
Environmental Factors						
Density	.034	.148	6.583	3.584	4.01	8.25
Demand	1.288	3.674	1.692	1.343	1.31	1.24
Competition	-.297	-2.708	-.712	-.288	-.560	-.301
Responsiveness	.753	.410	.587	.274	.273	.166

1 Since this table represents the dynamic, differential equation form of the linear partial adjustment model, goodness-of-fit tests are not meaningful.  
 2 For Retail Census data, N = 200 state-years for each industry, representing data from 50 states for 1972, 1977, 1982, and 1987. For Franchising in the Economy, N = 266 (14 industries across 19 years).

which a population can respond to changes in the carrying capacity of its environment. The finding that franchises exhibit more responsiveness than company-owned units suggests that franchises will expand more rapidly than company-owned units during high market growth. This is due to their ability to respond more quickly to growth opportunities, as hypothesized. Table 2 explores this relationship for the *Franchising in the Economy* data base, by examining franchise and company-owned growth rates for each industry

TABLE 2. Franchise and Company-Owned Growth Rates and Proportional Change in Number of Franchises Arranged by Industry Growth Rates—1969 to 1987

Kinds of Franchising Business	Annual Compounded Industry Growth Rate	Annual Compounded Franchise Growth Rate	Annual Compounded Company- Owned Growth Rate	Change in Proportion of Franchises to Total Units
1. Printing and Copying Services	.240	.253	.109	+ .16
2. Construction	.216	.238	.181	+ .10
3. Recreation, Entertainment and Travel	.200	.188	.357	- .04
4. Restaurants	.092	.082	.116	- .17
5. Educational Products and Services	.085	.083	.092	+ .01
6. Accounting, Credit, Collection Agencies	.069	.075	-.013	+ .02
7. Convenience Stores	.057	.052	.062	+ .03
8. Tax Preparation Services	.057	.060	.056	+ .08
9. Employment Services	.050	.054	.045	+ .08
10. Automotive Products and Services	.045	.035	.072	+ .11
11. Soft Drink Bottlers	.036	.034	.082	- .06
12. Gasoline Service Stations	.004	.006	-.002	+ .02
13. Laundry and Drycleaning Services	-.014	-.019	.028	- .02
14. Retailing (Non-Food)	-.022	.035	-.069	- .08

for the time period 1969 to 1987. The fourteen industries are listed in descending order of annual compounded growth rate in sales volume. For each industry, we calculated the annual compounded growth rate in sales volume for both franchises and company-owned units. We also considered the change in proportion of franchised units to total units during the time period 1969 to 1987. Our expectations would be that, for high growth industries, the franchise growth rate would exceed the company-owned growth rate. Also, we would expect that increases in the proportion of franchises to total units would be positively related to industry growth rate. The results show mixed support for these expectations. At the aggregate level our model identifies franchises as more responsive than company-owned units; when we examine growth rates at the industry level, more variation is observed.

### *Competition*

The findings support the existence of a competitive relationship between the two populations, for each data base. The competition coefficients refer to the relative impact of growth in one organizational form on the carrying capacity or sales potential of the other organizational form. The magnitude and sign of these coefficients suggest the nature and relative strength of competition between populations. At the national level of analysis, franchises exhibit a stronger competitive impact on company-owned units ( $-2.708$ ) than the impact of company-owned units on franchises ( $-.297$ ). This can be interpreted as the negative impact on the carrying capacity of the environment for the company-owned population due to an increase in the sales volume of the franchise population. For the state level data comparing the franchise population with the independent operator population, the relative strength of the competitive impact is reversed. For both the restaurant and refreshment places industries, increases in the sales volume of independent operators exert a stronger negative effect on the sales potential for franchises ( $-.560$ ,  $-.712$ ) than the effect of franchises on independents ( $-.301$ ,  $-.288$ ).

### *Total Demand and Population Density*

Increases in total market demand exhibited a positive effect on potential sales volume for each population from each data base.

Demand had the strongest effect on company-owned units at the national level.

The density coefficients did not behave as expected. For the *Retail Census* data base, the coefficients are positive and strong, with each organizational form in each industry benefiting from increases in population density. As the number of total outlets (franchises and independents) per capita increased, the carrying capacity for each population also increased. For the *Franchising in the Economy* data base, the density coefficients are positive, but modest. Increases in density exhibited, in the *Retail Census* data, a positive "multiplier" effect on the sales potential for each organizational form. This may be tentatively explained by several factors. Increasing density suggests more variety and choice for the consumer, greater awareness of these types of establishments due to increased signage, shorter travel times to reach an outlet, etc., thereby expanding this market. It is also possible that changing lifestyles, greater demand for convenience, and increased desire for entertainment account for part of this finding.

### DISCUSSION

The findings suggest that a Population Ecology view of franchising generates important insights. Among franchises, company-owned units, and independent operators, competition from other populations and conditions of the environment influence changes in the size of each population. Also, different populations are able to respond to changes in the environment at different rates, with franchise populations being the most responsive. These issues have not been previously modeled in a franchising context. We now address some limitations of the study and opportunities for future research.

First, our findings are limited to the time periods and industries covered in the two data bases and may not be generalizable to other settings. Second, although census data are often used in this type of research, using two separate data bases can create issues of comparability (Lafontaine 1993). While two separate models were run, one for each data base, we would suggest caution in comparing the results of one model to the other. Also, our analysis was limited to two levels; a national or aggregate level (*Franchising in the Econ-*

omy) and a state level (*Census of Retail Trade*). Third, a Population Ecology perspective does not attempt to incorporate the impact of micro-level decisions by managers. The theory does not exclude the possibility of change due to managerial decision making, but rather seeks to explain variation in organizational form due to macro-level forces. Since the level of analysis is at the population level, this precludes incorporating changes due to micro-level decisions within firms. A final possible limitation concerns collinearity among the independent variable set. Collinearity in Population Ecology models stems from the theory and is manifest in the data. In other words, the very nature of ecological research mandates some level of collinearity among the independent variables since these variables will include lagged sales for a given population, sales for the competing population, and a measure of industry level sales. Since these populations must be in competition for resources in order for changes in each to influence the other, there will generally be collinearity. Based on Mason and Perreault (1991), however, the impact of collinearity may not be a serious problem in this study. This is due to other characteristics of the data bases which offset the impact of collinearity, including  $R^2$  values of at least .75 and sample sizes of 250. Our two data bases meet these requirements.

We believe that the population ecology framework offers important research opportunities for the study of franchising. In discussing these opportunities, the common thread which links them will be the challenges surrounding data collection. One opportunity is the ability to model competition among different types of franchising systems; for example, systems that are predominantly franchise-based, mixed, or mostly company-owned units. This line of inquiry would require longitudinal data collected at the franchise system level. Populations would be defined as groups of franchise systems which share a common configuration; for example, all franchise chains with a high proportion of franchisees. A second research opportunity would be a direct test of the redirection hypothesis. This test would also require chain-level data. This would permit an alternate explanation of the redirection hypothesis, that changes in the proportion of franchises and company-owned units would be due to environmental forces rather than managerial action. A Population Ecology explanation would suggest change at the chain level,

rather than change within a franchise chain. In other words, chains with a significantly different proportion of franchises would replace other chains, rather than changes in proportion within a chain. A third research opportunity would be the application of the Population Ecology framework at a lower level of analysis—that of the metropolitan area. The metropolitan area would represent the competitive environment and within this area, organizations would be grouped according to similar characteristics. The analysis would then examine, within a metropolitan area, the effects of competition between populations as well as the responsiveness of populations to that environment. We believe that the current research provides an important first step in these directions.

#### REFERENCES

- Boeker, Warren (1991), "Organizational Strategy: An Ecological Perspective," *Academy of Management Journal*, 34, No. 3, 613-635.
- Brickley, James A. and Frederick H. Dark (1987), "The Choice of Organizational Form," *Journal of Financial Economics*, 18, 401-420.
- Brittain, Jack W., and John Freeman (1980), "Organizational Proliferation and Density Dependent Selection," in *The Organizational Life Cycle*, John Kimberly and Robert H. Miles, eds., p. 291-338, San Francisco: Josey-Bass.
- Carroll, G. (1984), "Organizational Ecology," *Annual Review of Sociology*, 10, p. 71-93.
- Day, George S., and Robin Wensley (1988), "Assessing Advantage: A Framework for Diagnosing Superiority," *Journal of Marketing*, 52 (April), p. 1-20.
- Hannan, Michael T., and John Freeman (1978), "Internal Politics of Growth and Decline," in M. Meyer and Associates (eds.), *Environments and Organizations*, 177-199, San Francisco: Josey-Bass.
- \_\_\_\_\_ (1977), "The Population Ecology of Organizations," *American Journal of Sociology*, 82, 929-964.
- Justis, Robert, and Richard Judd (1989), *Franchising*, Cincinnati, OH.: South-Western Publishing Co.
- Lafontaine, Francine (1993), "The Evolution and Characteristics of Franchising in the 1980's," in *Excellence '93: A Bridge to Success*, Rajiv P. Dant, ed., 1993. Proceedings of the Society of Franchising, Lincoln, NE: International Center for Franchise Studies, University of Nebraska.
- \_\_\_\_\_ (1992), "Agency Theory and Franchising: Some Empirical Results," *Rand Journal of Economics*, 23 (No. 2, Summer), p. 263-283.
- Lambkin, Mary and George S. Day, (1989) "Evolutionary Processes in Competitive Markets: Beyond the Product Life Cycle," *Journal of Marketing*, 53 (July), p. 4-20.

- Mason, Charlotte H. and William D. Perreault (1991), "Collinearity, Power, and Interpretation of Multiple Regression Results," *Journal of Marketing Research*, Vol. 28 (August), p. 268-280.
- Miles, Robert E. and Charles C. Snow (1978), *Organizational Strategy, Structure, and Process*, New York: McGraw-Hill.
- Nielson, Francois and Michael T. Hannan (1977), "The Expansion of National Educational Systems: Tests of a Population Ecology Model," *American Sociological Review*, 42, 479-490.
- Norton, Seth W. (1988a), "Franchising, Brand Name Capital, and the Entrepreneurial Capacity Problem," *Strategic Management Journal*, Vol 9, 105-154.
- \_\_\_\_ (1988b), "An Empirical Look at Franchising as an Organizational Form," *Journal of Business*, 61-2, 197-218.
- Oxenfeldt, Alfred R. and Anthony O. Kelly (1968-69), "Will Successful Franchise Systems Eventually Become Wholly-Owned Chains?" *Journal of Retailing*, 44 (Winter), p. 69-83.
- Porter, Michael E. (1980), *Competitive Strategy*, New York, Free Press.
- \_\_\_\_ (1988), *Sales and Marketing Management*, "1988 Survey of Buying Power: Part II," Nov. 7, 1988.
- Tuma, Nancy Brandon and Michael T. Hannan (1984). *Social Dynamics: Models and Methods*, Academic Press: Orlando, FL.
- U.S. Department of Commerce, Bureau of the Census. 1972, 1977, 1982, 1987 Census of Retail Trade, Washington, DC: U.S. Government Printing Office.
- Weinrauch, Donald J. (1986), "Franchising an Established Business," *Journal of Small Business Management*, 24 (July), p. 1-7.

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