ELSEVIER

NEW FIRM SURVIVAL: INDUSTRY, STRATEGY, AND LOCATION

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EXECUTIVE SUMMARY

How important is the physical location of a new firm for its chances of survival? Location of a new firm, whether in urban, metro, or rural vicinities, can have important impacts on performance outcomes. Urban locations often contain a wealth of diverse resources but may also have a greater number of competitors. Rural locations may lack diversity but can enable the firm to exploit a niche with limited competition. We suggest that a simple examination of new firm location will not adequately predict survival chances. Rather the impact on location of the new firm will be influenced by the industry in which the new firm operates and by the strategy the new firm pursues.

The industry of the new firm is examined by focusing on where the new firm is located in the value chain. We predict that a new firm upstream in the industry value chain will have better chances of survival than new firms downstream in the industry value chain. New firms with broadly focused strategies are hypothesized to have greater survival chances than new firms strategically positioned to exploit a narrow market focus. And we predict that new firms in urban locations will have greater chances for survival than new firms in rural locations.

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The initial data collection in Pennsylvania, completed in 1986 at the University of Pennsylvania Snider Entrepreneurial Center, was sponsored by the Appalachia Regional Commission and the Pennsylvania Department of Commerce. The initial data collection in Minnesota, completed in 1986–87 at the University of Minnesota for Urban and Regional Affairs, was sponsored by 10 state, regional, and local agencies in Minnesota. The 1991–92 follow-up data collection has been a joint effort of the Marquette University Center for the Study of Entrepreneurship, University of Minnesota Carlson Entrepreneurial Center, and University of Pennsylvania Snider Entrepreneurial Center; the first unit has assisted in providing original data and coordinating the effort, the latter two have provided the majority of the financial support. Dr. Mary Williams, of Widener University, is serving as project coordinator. A previous version of this study was presented at the Third Global Conference on Entrepreneurship, Lyon, France, March 1993.

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We propose in this research that survival chances of new firms are best understood by examining interaction effects between location, industry, and strategy. To accomplish this examination, we develop a model for testing two-way interactions between industry-strategy, location-strategy, and industry-location. Finally, we include a three-way interaction where new firms are tested for survival outcomes based on the combination of location, strategy, and industry.

The findings of this study, based on a large representative sample of over 1900 new firms, suggest that new firm survival chances are not significantly impacted when industry was examined separately. The findings do indicate that survival chances are associated with strategy and location and by the two-way interactions of industry by strategy. Although the three-way interaction test of industry, strategy, and location did not indicate statistical significance, there are specific instances where survival chances of the new firm appear to be modified by industry and location.

INTRODUCTION

Founders of new firms, whether individual or a group, make numerous decisions prior to the firm's start-up (Reynolds and White 1992). These decisions reflect a "gestation" process whereby founders commit resources, identify markets to serve, determine attributes of the product or service, and organize the firm to manage internal and external activities. At the time these decisions are made, it is often unclear to founders what their impact will be on the firm's performance or on its chances for survival. However, the research literature suggests that "liability of newness" (Stinchcombe 1965) plays an important role in the fortunes of a new firm. Liabilities can be often traced to resource commitments that constrain founders in their options should conditions change or be miscalculated in establishing the firm.

We examine three factors that reflect commitment of resources based on decisions during the gestation phase of founding. Factors examined are: (1) physical location of the firm as a place of business, (2) strategic focus of the firm as a method of competing for resources in the environment, and (3) industry affiliation that defines the core technology of the firm. We suggest that founders make decisions regarding these factors with mutual dependence and therefore are best examined as a set of decisions rather than studied individually. Given the shaping power of founding conditions we propose to extend the understanding of the "liability of newness" by examining new firms across multiple industries, locations, and with differing strategies to discern survival chances.

NEW FIRM SURVIVAL AND DISCONTINUANCE

It is a commonly held belief that new firms discontinue operations at a disproportionately higher rate than older firms. Discontinuance of a new firm may be the outcome of individual characteristics of the founders, structural characteristics of the new firm, and/or conditions of the environment that impact on the new firm's effort to deliver a good or service to the market (Bruderl, Preisendorfer, and Ziegler 1992). Most research has focused on founders as a key factor influencing new firm survival and success (Cooper 1991). Although evidence suggests that personality traits such as leadership or social relationships of founders contribute to new firm survival chances, we believe this emphasis does not provide a complete picture. Nor do we believe that an emphasis on internal conditions of the firm, such as distribution of authority or spans of control, fully explains new firm outcomes over time. Without discarding the importance of these and other streams of research, we focus on a more neglected area of new firm attributes: contextual conditions. We suggest that new firm survival and discontinuance can start with an understanding of the contextual conditions in which the new firm operates. These contextual conditions, in turn, we hypothesize, will impose differential probabilities on survival and discontinuance of the new firm.

Contextual Conditions of New Firm Survival

Contextual conditions of a new firm are distinguished from other attributes in that founders, once committed to the condition, may have little opportunity to change their impact on the firm. Contextual conditions also can be considered to be attributes of the firm that are selected directly or indirectly by founders in the gestation stages of the new firm. The extent to which managers consider the importance of contextual conditions of the new firm is not fully understood and is not explored here. However, we suspect that in many instances they are "givens" and are not decisions reflecting choice among a wide array of alternatives. Indeed, preliminary evidence indicates that founders of new firms are highly likely to start a new firm in the location where they reside (Reynolds and White 1992).

We have selected three conditions that we believe fall within the parameters of a definition of new firm context: location, industry, and strategy. Because so little of the previous research on contextual conditions and new firm survival has examined these three conditions, we rely on related research streams to conduct this exploratory analysis. After a brief discussion of the three contextual conditions related to the importance to the survival and discontinuance of the new firm, we offer hypotheses to be tested.

New Firm Location

The location of a new firm in a physical environment is believed to have a direct impact on survival. Physical locations are assumed to vary widely along three resource dimensions: composition, dispersion, and turnover. Locations may be composed of an abundance or dearth of labor, capital, information, or material that is critical to the operation of the new firm. For instance, some locations have skill uniformity in labor supply where other locations vary widely in skill composition. Resources also may vary in regard to being dispersed, making their discovery and acquisition costly, or they may be concentrated in immediate access to the new firm. Locations may also vary in the resource turnover rate, such as high or low mobility of labor and capital. Turnover generates degrees of instability to which founders and managers of new firms must respond.

Variations in new firm environments are not limited solely to physical surroundings (Carroll 1987). Variations also may occur in political environments or institutional environments; however, we confine our analysis to the physical environment. Specifically we are interested in understanding how new firm survival chances are affected by the urban and rural dimension.

The study of organizations (as well as human behavior) has a long tradition of contrasting urban with rural settings in the sociology literature (Hawley 1950). Cities, towns, and villages provide structures that offer opportunities to new ventures and limit choices. New firms are often confined to working with the resources that are made available to them (Aldrich 1979). In general, large urban areas promote expanded competition by increasing the rate of new firm formation. This increase is a result of the size of the resource base. Conversely, in rural areas, the number of new firms is limited because the supporting resource base is much smaller. Hence, the number of new firm start-ups should vary by location with urban settings spawning greater numbers of new firm start-ups and rural settings having few numbers of new firm start-ups.

Survival chances of new firms should also vary by location. Whereas urban areas will support more and different types of new firms due to size and diversity of resources, they also generate greater levels of competition for resources. However, diversity of resources enables new firms to identify niches that reduce competitive effects. Large numbers of resource niches

are generally absent from rural settings and thus competitive effects can be more acute.

> *Hypothesis 1:* New firm survival chances are higher in urban locations and are lower in rural locations.

New Firm Industry

The influence of industry setting on new firm survival is also thought to be profound. For example, many founders establish their business based on prior work experience in the same or similar industry (Reynolds and Miller 1990). Industry context implies more than the clustering of products and services by designated categories. It also suggests that firms operating in the industry have similar core technologies (Stearns, Carter, and Reynolds 1993). Core technology can be understood as a process that is common among firms in terms of acquisition, transformation, and distribution of a good or service. These core technologies translate into a production chain where the manufacturing of goods and services are located upstream in the chain, distribution midstream, and retail and services provided to the end-user are located downstream in the industry chain (Carter et al. 1994). Figure 1 depicts the location of core technologies on the industry chain.

Industry, as a contextual condition, also provides structure to the method by which firms compete (Porter 1980). Competition, as a significant force on new firm survival probabilities, has been found to be of significance. For instance, McDougall and Robinson (1990) found that in the computer and communications manufacturing industry, return on investment and market share growth could be predicted by variations in entry barriers. Bruderl, Preisendorfer, and Ziegler (1992) found that among new firms in Germany, discontinuance rates were higher in the retail and the transportation industries than in other industries. Seemingly, firms in downstream industries not only must face more diverse competition but also operate in conditions where buyers and suppliers are more diverse and have greater levels of turnover. These conditions of downstream industries, in turn, introduce higher levels of uncertainty reducing new firm survival chances.

> *Hypothesis 2:* Survival chances will be improved for new firms upstream in the industry chain, whereas new firms downstream will have a decrease in survival chances.

New Firm Strategy

Unlike research on location and industry, consensus over the role of strategy and its impact on new firm success is less clear. It is suggested by some, for instance, that managers of firms have few constraints on their selection of a strategy and that the strategy can be modified and transformed over the life of the firm with little consequence on survival chances (Child 1972). Other bodies of research have taken a view that firm strategy is rapidly institutionalized in the early stages of the new firm and therefore limits options of managers (Hannan and Freeman 1977).

More recent research on new firm strategy suggests that the breadth of a new firm's strategic foci can have consequential effects on new firm outcomes. Some founders design their firm to exploit narrow breadths of the market they are seeking to serve. Other new firms are designed to serve broad market breadth by exploiting multiple strategic foci. The narrowness or breadth of strategic attention is assumed to determine the degree and level of resources that must be acquired from the environment (Carter et al. 1994). In addition, the selection of a broad versus narrow strategy should have different survival chances under different environmental circumstances (Aldrich 1979).

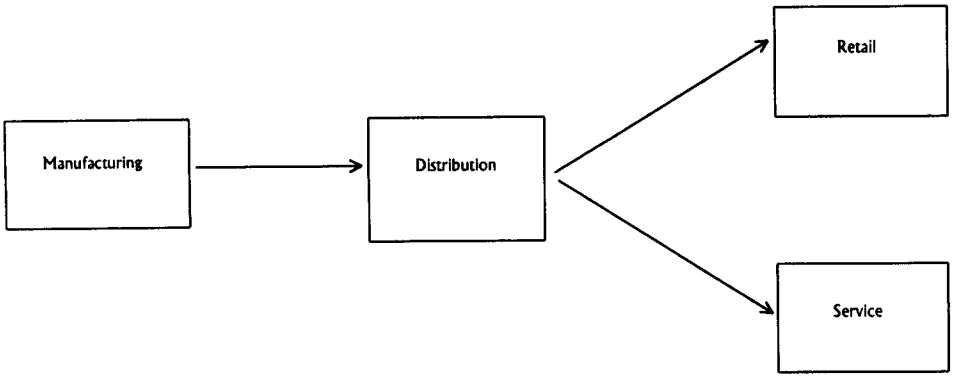

FIGURE 1 Location of core technologies on the industry chain.

We assume in this study that external variations, whether emanating from location or industry, have differential impacts on strategic foci of the new firm. Prior research suggests that founders of new firms consider price, quality, application of high technology, aesthetics, and location as important choices for the strategic make-up of the firm (Carter et al. 1994). Broad strategies are thought to have better survival chances in the early years of a firm, as they increase flexibility of the firm in the exploitation of resources. Narrow strategies can constrain the firm and therefore increase the chances of discontinuance in the firm's formative years.

> *Hypothesis 3:* Survival chances will be improved for new firms with broad strategic foci, whereas new firms with narrow strategic foci will have a decrease in survival chances.

Industry–Strategy Interaction

Although both strategy and industry have been shown to affect new firm survival, several researchers argue that the combination of the two constructs is most important in predicting new firm success. The literature that reports industry–strategy interaction tests, however, has tended to use performance variables other than survival to assess outcome. Sandberg and Hofer (1987) found that in industries in the late evolution stage, a focused strategy outperformed the broad strategy. When all stages of industry evolution were collapsed, the reverse was true. Similarly, Romanelli (1989) found that at stages in the industry life-cycle when resources were more abundant and competition weak, generalists strategic orientations performed well. When resources were concentrated among a few dominant firms, a specialist strategy prevailed. Keeley and Roure (1990) demonstrate that the strategy–industry relationship exerted greater influence on performance than characteristics of the founding manager. However, the sample size of 36 firms led them to conclude that this relationship is tentative and further investigation is required using either larger or more heterogeneous samples. Finally, McDougall and Robinson (1990) found that while strategy and industry both affect new firm performance, the interactions between the two produced the strongest effects. These tentative findings lead us to hypothesize:

> *Hypothesis 4:* Survival chances will be improved for new firms with narrow strategic foci in downstream industries, whereas new firms with broad strategic foci will have a decrease in survival chances in downstream industries.

Location-Strategy Interaction

Much prior research on business units has focused on the relationship among environments, strategy, and performance (Hambrick 1985; MacMillan, Hambrick, and Day 1982; Miles and Snow 1978). However, much of this research has concluded that either the environment is a major factor influencing firm performance or that the firm's strategy is a primary factor influencing firm performance. Few studies have attempted to test the interaction between environment and strategy on survival chances of new firms.

One study that attempted to test a moderated relationship was conducted by Prescott (1986). Using moderated regression analysis, the results indicate that explained variance cannot be increased when accounting for interaction effects between strategy and environment, but that strategy and environment contribute to explained variance separately. However, the study used PIMS data that does not distinguish which firms are recently founded. In addition, environment was examined as an industry sector without focus on the physical setting of the new firm.

Population ecology theory makes perhaps the boldest statement regarding the role of the environment and firm performance (Aldrich 1979; Hannan and Freeman 1977). Ecologists postulate that firms are highly influenced by variations in the environment. These variations in turn have consequences for survival. Whereas ecological theory considers the role of strategy as an instrument of firm management, little emphasis in the ecological literature has focused on the interactive role of location and strategy on survival chances.

> *Hypothesis 5:* Survival chances of new firms will be significantly influenced by the dual attributes of location and strategy.

Industry–Location Interaction

Although there is little in the literature to guide our predictions about the interactive effect of industry and location, we suspect the joint effect is important for new firm survival. We speculate that some new firms will be less influenced by their location if situated in one type of industry as opposed to another. A manufacturer in a rural location, for instance, may survive as easily as a manufacturer in an urban location. Manufacturing firms often rely on a narrow set of buyers and thus the identification and cultivation of those buyers is critical to the survival of the new firm. However, a new firm situated downstream in the industry chain, in retail or services, may face more pronounced consequences from its location. The impact of competitors on survival chances can be greatly increased in rural locations such as the introduction of a Wal-Mart to the area. Although certainly of consequence for new firms in urban locations, the large, diverse populations allow for greater opportunities to identify niches.

> *Hypothesis 6:* Industry–location interaction will be significant. New firms located downstream will have survival chances greater in urban locations and lesser in rural areas, whereas upstream new firms, such as in manufacturing, will not be significantly affected.

Location, Industry, and Strategy Interaction

Although evidence from prior research suggests that location, industry, and strategy have consequential effects on the survival of new firms, research combining the three constructs has been relatively absent. In addition, the literature that has attempted to study interaction effects has focused primarily on performance outcomes such as profit and growth. Little focus

has been given to the study of discontinuance rates of new firms based on the interaction among location, industry, and strategy across a broad-based sample of new firms.

This study offers a preliminary investigation into the study of strategy, industry, and location on survival chances of new firms. A general hypothesis is posed: does the interaction between strategy, industry, and location explain the chances of new firm survival to a greater degree than two-way interactions? If not significant, are there strategies more capable of promoting new firm survival based on the industry and location of the firm?

METHODS

Sample

Data for assessing new firm survival as an outcome of location, industry, and strategy were collected in a survey of new firms in Pennsylvania and Minnesota in 1986 (Reynolds and Miller 1988). Firms selected in the sample reflect the population distribution of new firms founded between 1979 and 1985 in the states of Minnesota and Pennsylvania. A new firm was defined as an autonomous business founded to produce a good or service and having initiated sales between 1979 and 1984. None are branches or subsidiaries of established business firms. All regions of the two states and all industry sectors were represented in the sample. The sample was based on firms listed in the Dun's Marketing Identifier files as between one and six years old just prior to the survey. Phone call verification excluded all listings that were not new, autonomous, and active. About one-half of the listings qualified. Each eligible new firm was sent a mail questionnaire three times, with a reminder postcard between the first and second mailings. Phone interviews were completed with about half of those not returning the mail questionnaire. Final response rate was 69% in Pennsylvania and 75% in Minnesota.

Subsequent phone interviews were completed in 1991 to verify status of the respondents to the initial survey. Five categories of responses were noted: (1) firms that were still in operation at the time of the 1991 survey; (2) firms that we could confirm were out of business; (3) firms that were "dormant" at the time of 1991 survey; (4) firms that had been "sold or merged;" and (5) firms that, despite multiple follow-ups using phone directories (four to six calls) and site visits, could not be contacted. Because it is difficult to judge whether firms that are dormant or those that are sold or merged can be classified as surviving for the present analysis, we disregarded firms in these two categories from the analysis. Furthermore, our persistence in contacting the firms in the sample gave us confidence to categorize the "unable to contact" as discontinued firms.

Measures

Dependent Variable

Based on the subsequent phone interviews conducted in 1991 and 1992 to verify status of the 2653 respondents to the 1986 survey, we coded firms that were still in operation with a "1" and those that had disappeared as "0." Sixty-seven percent of the 1986 new firms were found to still be operating in 1991. As we treated the firms as a dichotomy—survival or discontinuance—logit regression analysis was deemed appropriate.

Independent Variables

Four independent variables were included in the study: the year of the first resource commitment made by the owner, location of the new firm, strategy of the new firm, and industry of the new firm.

Year

The year in which the owner of the new firm first made a resource commitment to the firm was included in the analysis for purposes of control. Although all firms in the sample were six years or less in age, we assumed that one-year-old firms in 1986 would have differential outcomes from six-year-old firms in 1986. If the assumption were correct, the results could be biased toward firms that were "old" in the sample, possibly having gone beyond liabilities of newness. Also, we know that the sample is left-censored and thus a firm that is six years old in 1986 may represent only a small proportion of firms originating in 1980. If our assumption is true, we would expect the term for year to be significant and negative (e.g., older firms in 1986 would have lower rates of discontinuance by 1991).

Industry

Firms were classified into industry categories that resulted from aggregating several SIC codes assigned by Dun and Bradstreet. Overall nine industry classification categories were identified. For the present study firms from mining, agricultural services, and construction were dropped as were firms from health, education, and social services.

Industry sectors were combined into four industry entities to correspond to the industry chain illustrated in Figure 1: (1) manufacturing, (2) distribution, (3) retail, and (4) services. Manufacturing, distribution, and retail are each an industry sector in the SIC codes. Services is a combination of SIC codes for consumer services and product services. These two industry sectors combine establishments engaged in utilities, finance, insurance, real estate, social, and consumer services. Firms operating in this industry category are primarily engaged in providing an end-use service to local consumers. Each firm was assigned a code of "1" if it resided in the industry and a code of "0" if it did not reside in the industry.

Each industry classification represents a common core technology of a new firm. Manufacturing is considered an "upstream" industry where production of a good or service takes place. Distributive services represent new firms engaged in the activity of moving a good or service from a supplier to a buyer. Retail is considered downstream where products and goods are provided to the end-user. Service represents firms involved "downstream" whose core technology is providing a service to the end-user.

Strategy

The questionnaire method of data collection used relies on key informants to indicate the focus of firms' competitive strategy. The advantages and disadvantages of this approach have been debated in the literature. Seemingly, the resolution to the debate hinges on determining who best represents the organizational characteristics that are of interest. In the strategic management literature researchers often have relied on top managements' assessment of firm strategy, citing the unavailability of archival data. For new ventures in particular, the "self-typing" approach seems appropriate. As architects of the founding strategies, these individuals are uniquely qualified to assess strategic intentions. Indeed, firms' strategy undoubtedly embodies founders' wishes, and thus relying on owners' perceptions as the source of data is justifiable. Further support for using perceptual data is provided by Shortell and Zajac (1990) who recently demonstrated convergent validity using perceptual and archival measures of strategic orientations.

Respondents to the survey questionnaire were asked to indicate on a four-point scale ranging from critical (1), to insignificant (4) the importance of 13 attributes of competitive

strategy to their firms' strategic focus. These items were chosen for their correspondence to previously identified strategy attributes (Dess and Davis 1984; Hambrick 1983) and their appropriateness to new ventures (Changanti, Changanti, and Mahajan 1989; MacMillan and Day 1987).

In previous analyses (Carter et al. 1994) factor analysis and cluster analysis were used to identify "patterns" of strategic attributes that are emphasized in new firm strategies. Six strategic attributes were identified: price, site location, service, high technology, market research, and distinctiveness. The clustering of these six strategic attributes allows for new firm strategies to be identified as either broad or narrow in market focus. A broad strategy is one where the new firm pursues multiple strategic attributes. A narrow strategy is one where the new firm pursues few strategic attributes. These procedures are consistent with the prevailing conceptualization in the literature that firm strategy is a multidimensional construct that represents a composite or bundle of actions. The six strategic archetypes are described and ranked from broad to narrow.

1. Super Achievers—Firms pursuing this strategy strive to promote multiple strategic attributes simultaneously. These new ventures want to be all things to all people. They attempt a flexible and responsive position in the market by emphasizing characteristics of their situation, exploiting advanced technology, and by emphasizing the quality of their distinctive products and services relative to the price charged. This strategy is broad-based in its efforts to exploit a diverse set of resources in the environment.
2. Quality Proponents—Firms adopting this strategy also have a penchant for a broad target market. Quality proponents are much like super achievers except they do not emphasize price as an integral strategic foci. In addition, firms in this cluster rely more heavily on distinctive products, superior service and high technology to serve the market.
3. Equivocators—Firms adopting this strategy fail to emphasize any particular strategy focus. This strategy may be analogous to Porter's (1985) description of firms "stuck in the middle." At best ambivalent, uncertainty seemingly characterizes strategy formation in these new ventures. Because a distinct strategic emphasis is absent, we consider the strategy to be neither broad or narrow.
4. Price Competitors—This strategy reflects new ventures' attempts to rely on a combination of marketing/advertising and low price to attract customers. This strategy appears to be the most flexible because pricing and advertising can be changed quickly in response to competitor actions. To implement an effective pricing strategy requires that firms make appeals to a price-conscious segment of the market.
5. Niche Purveyors—These firms emphasize site qualities. Attractive facilities at superior, convenient locations are seen as creating consumer value. By coupling convenience with exceptional or unique products, at competitive prices, these firms narrow their scope and attempt to secure a distinctive foothold in the competitive landscape by focusing on a narrow segment of the population.
6. Technology Value—Firms adopting this strategy pursue a differentiation approach. They attempt to distinguish themselves by making price-competitive products through the use and/or development of new technology. This strategy is narrow-based as technology products and services limit the market segment they seek to serve.

Table 1 identifies the items in the questionnaire that measure new firm competitiveness sorted by their factor loadings. Figure 2 identifies the six strategy archetypes and their classification by broad and narrow market.

Table 1. Factor Analysis of New Firm Competitive Strategy Associated With Factor Dimensions

Competitive aspects emphasized	Descriptive
Factor 1 *alpha* = .63 Fast response to changes in markets (.81) Serve those missed by others (.69) More effective marketing/advertising (.68)	Market Sensitivity Knowledge of the market emphasized to reach and respond quickly to key customer needs.
Factor 2 *alpha* = .81 Develop new/advanced technology (.92) Utilize new/advanced technology (.87)	Technology Emphasize process or product technology by developing or using new or advanced technology.
Factor 3 *alpha* = .61 More contemporary, attractive products (.76) Distinctive goods/services (.71) More choices (.64)	Product Distinction Seek to distinguish the firm from others in the market place by providing unique products or services.
Factor 4 *alpha* = .71 Superior location/customer convenience (.84) Better, more attractive facilities (.83)	Site Appeal Attractiveness and convenience of facilities and location emphasized.
Factor 5 *alpha* = .68 Better Service (.86) Quality product/services (.81)	Service Provide a higher level of service than competitors.
Factor 6 Lower prices (.93)	Price Sell products or services at a lower price than competitors.

Location

The state of Pennsylvania comprises 10 regions and the state of Minnesota consists of 13 regions. Each region was classified as one of three types based on population density: (1) urban, including the metropolitan regions of Minneapolis–St. Paul, Philadelphia, and Pittsburgh; (2) metro, including regions of modest population density and containing such cities as Harrisburg and Scranton; and (3) rural, where population density is sparse and no major city dominates the economic activity of the region.

Each firm was assigned a value of "1" if they were located in an urban, metro, or rural region and a value of "0" if the firm was absent from the location. Table 2 presents the three measures of industry, strategy, and location by their distribution of new firms in the sample.

Data Analysis

Logit regression analysis was conducted using SPSS-PC to predict the relationship between new firm survival and the three contextual conditions of location, strategy, and industry. The logit regression procedure is useful for locating explanations between variables when the variables are categorical. The logit model assesses variables on new firm survival to determine significance in the relationship. Stepwise techniques were used to determine how factors of variables classified by industry, strategy, and location would contribute to the analysis. This stepwise procedure resulted in eight models being developed. Each contextual variable had to achieve a significance level of less than .10 to be able to enter the model. In the first model we entered only the control variable, year (first resource commitment made by

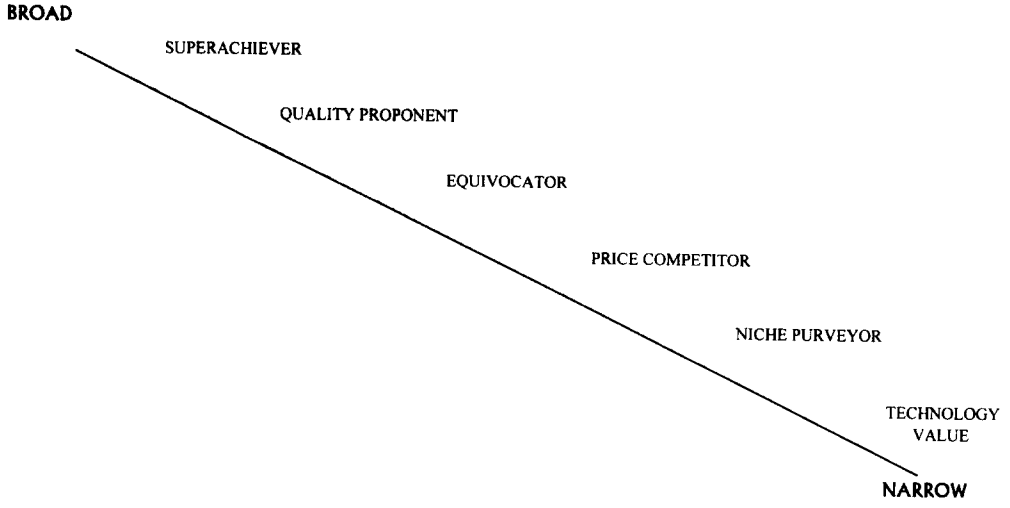

FIGURE 2 Strategy archetypes by market scope.

the new firm owner). We then entered the measures associated with each of the contextual conditions: location, industry, and strategy (models 2, 3, and 4). We then entered two-way interactions: (1) industry by strategy (model 5), (2) industry by location (model 6), and (3) location by strategy (model 7). Finally, a three-way interaction was entered where survival and death were examined for location, strategy, and industry (model 8). Our assumption is that significant patterns in survival and discontinuance would not exist when distributed separately by location, industry, or strategy.

TABLE 2 Frequencies of New Firms by Industry Classification, Competitive Strategies, and Location

	Frequency	Percent
Industry		
Manufacturing	408	21.4
Distribution	553	29.0
Retail	241	12.6
Service	707	37.0
Total new firms	1909	100.0
Competitive Strategy		
Super achievers	515	27.0
Price competitors	351	18.4
Equivocators	269	14.1
Technology value	222	11.6
Niche purveyors	234	12.2
Quality proponents	318	16.7
Total new firms	1909	100.0
Location		
Urban	1266	66.3
Metro	305	16.0
Rural	338	17.7
Total new firms	1909	100.0

To test the hypotheses we evaluated differences in the levels of the contextual variables by using deviation contrasts. This approach compares each level, or factor, to the pooled effect of the variable's levels. For example, if the pooled effect of location is statistically significant as indicated by the Wald value, the effect of urban location can be evaluated in comparison to the average effect of all three location factors (i.e., urban, regional, rural).

RESULTS

Table 3 reports the significant findings of the eight logit regression analyses. Results for all terms entered in the final logit regression analysis are reported in the Appendix. The results reported in Table 3 indicate that when firm age is entered in the first step it has a significant impact on the survival of new firms in the sample (Wald = 14.970 $p < .001$, $\beta = -.112$; $p < .001$). The negative direction of the coefficient estimate suggests that older firms in the sample have a higher chance of surviving than younger firms. This confirms our assumption about age within the cohort of new firms, and therefore the inclusion of the term serves as a control in the model.

The terms for locate, industry, and strategy were separately entered on the stepwise logit regression. The term locate introduces urban, metro, and rural locations into the analysis. The term for location was found to be significant (Wald = 5.245, $p < .05$). An examination of the contrasts reveals that in comparison to firms in other locations, firms in urban areas have decreased chances of survival ($\beta = -.136$; $p < .10$). In contrast, firms in rural areas have increased chances of survival ($\beta = .167$; $p < .10$). This finding runs counter to our hypothesis that urban areas would increase survival chances. The result also counters our suggestion that new firms located in rural settings would have decreased survival chances.

Introduction of the measure for industry was not found to be significant. Therefore our hypothesis that survival chances will be improved for new firms upstream in the industry chain is rejected as is our hypothesis that new firms downstream will have a decrease in survival chances.

The fourth step in the logit regression analysis includes the measure for the six strategy archetypes. Strategy was found to be significantly related to survival chances (Wald = 10.937 $p < .05$). The contrasts indicate that in comparison to other strategies, the price competitor strategy is associated with significantly lower chances of survival ($\beta = -.313$; $p < .01$). The results are mixed in their support of the hypothesis. We hypothesized that broad strategies of new firms would have improved survival chances whereas narrow strategies would have a decrease in survival chances. Price competitor is a narrow strategy and therefore lends support to the hypothesis. We find no support for our supposition that broad strategies are associated with higher survival chances.

Model five in Table 3 reports findings from the first set of two-way interactions to be introduced into the model, industry by strategy. This term was found to be significant (Wald = 32.324 , $p < .05$). The contrasts reveal that six of the 24 levels were significantly different from the pooled effect. In manufacturing, the strategy of quality proponent has greater odds of survival ($\beta = .578$; $p < .10$). Hence, the quality proponent strategy enhanced survival chances of new firms when situated in manufacturing industries. Three terms for new firms in retail were significantly different from the pooled effect. Quality proponents have decreased chances of survival ($\beta = -.907$; $p < .001$) as does the price competitor strategy ($\beta = -.419$; $p < .05$). The strategy technology value, on the other hand, has a better chance of survival ($\beta = 1.362$; $p < .01$). These results suggest that in the retail industries the strategies of price competitors and quality proponents increase the chances of discontinuance.

Table 3. Summary Results of Significant Terms in Logit Regression[1]

	1		2		3		4		5		6		7		8	
Model Variables	β	Wald	β	Wald	β	Wald	β	Wald	β	Wald	β	Wald	β	Wald	β	Wald
Age		14.790[d]		16.175[d]				16.345[d]		16.722[d]						16.111[d]
Year Start	−.112[d](.029)		−119[d](.030)				−.120[d](.030)		−.123[d](.030)						−.123[d](.031)	
Locate				5.245b[d]				4.339		4.713[a]						5.352[a]
Urban			−.136[a](.075)				−.129[a](.076)		−.145[a](.077)						−.213[b](.092)	
Rural			.167[a](0.91)				.148(.092)[a]		.145[a](.094)						.016(.109)	
Industry						NS		NS		NS						NS
Strategy								10.937[b]		14.847[b]						14.142[b]
Price Competitor							−.313[c](.119)		−.393[c](.129)						−.435[d](.136)	
Technology Value							.153(.160)		.529[c](.205)						.471[b](.222)	
Industry x Strategy										32.324[b]						27.462[b]
Mfg x Quality Proponent									.578[a](.304)						.969[b](.445)	
Retail x Quality Proponent									−.907[a](.212)						−1.116[d](.318)	
Retail x Price Competitor									−.419[b](.212)						−.497[b](.230)	
Retail x Technology Value									1.362[c](.456)						1.611[c](.544)	
Service x Niche Purveyor									.502[b](.257)						.889[b](.392)	
Service x Technology Value									−.874[d](.264)						−.894[c](.343)	
Location x Strategy												NS				NS
Industry x Location														NS		NS
Industry x Location x Strategy																24.661
Man x Metro x Niche Purveyor															−1.049[b](.699)	
Retail x Metro x Super Achiever															−.688[c](.278)	
Retail x Metro x Price Competitor															−.699[d](.348)	
Retail x Rural x Super Achiever															.489[b](.245)	
Retail x Rural x Equivocator															−.904[a](.504)	
Retail x Rural x Price Competitor															.617[a](.324)	
Service x Metro x Quality Proponent															−.873[b](.404)	
Service x Metro x Niche Purveyor															1.398[b](.705)	
Service x Metro x Technology Value															−.836[a](.479)	
Service x Rural x Niche Purveyor															−.845[a](.497)	
Constant	10.157[d](2.397)		10.732[d](2.427)		NS		10.843[d](.2.446)		11.175[d](2.497)		NS		NS		−11.227[d](2.521)	
-2 LL	2077.599[d]		2072.235[d]				2061.445[d]		2026.498[d]						1998.703[d]	
DF	1767		1765				1760		1745						1715	
X2	15.009[d]		5.365[a]				10.790[a]		34.947[d]						27.795	
Good	1770.94		1769.807				1768.880		1790.549						1880.219[a]	

[a] = $p < .10$.
[b] = $p < .05$.
[c] = $p < .01$.
[d] = $p < .001$
[1] Standard errors in parentheses.

Technology value strategy is one that increases the chances of survival. However, this latter finding must be interpreted with caution. Although the coefficient is positive and significant, technology value is not a strategy commonly found in retail. Indeed, there are only a few firms in the sample to represent that strategy. Interestingly, despite the low prevalence rate of the firms in retail that adopt the technology value strategy, survival is quite high.

In the service industries, two contrasts were found to be significant. Table 3 reports that technology value has a lower chance of survival ($\beta = -.874$; $p < .001$), whereas niche purveyor has a greater chance of survival ($\beta = .502$; $p < .05$). Hence, the niche purveyor strategy increases the chances of survival in the service industry. In comparison to other strategies, chances of discontinuance are increased in the service industry when a new firm pursues a technology value strategy. The hypothesis stated that new firms with broad strategic foci in downstream industries will have decreased survival chances, whereas new firms with narrow strategic foci in downstream industries will have increased survival chances. The results for quality proponent in retail lends support to this hypothesis. Additional support is provided by price competitor in retail and technology value in the service industry. Both strategies are narrow in market scope and were found to be less likely to fail in downstream industries. However, technology value was found to be a survival strategy in retail as was niche purveyor in the service industries that are contrary to the stated hypothesis.

Model 6 in Table 3 reports the second set of two-way interaction variables entered into the model by stepwise regression procedure, location by strategy. This equation was not found to be significant and thus the hypothesis that survival chances of new firms will be influenced by the dual attributes of location and strategy is rejected.

The final set of two-way interaction variables entered correspond to model 7 in Table 3, industry by location. It is hypothesized that new firms located downstream in the industry chain will have survival chances greater in urban locations and lesser in rural locations, whereas upstream new firms will not be significantly affected. No support for this hypothesis was obtained as the interaction term was not found to be significant.

Figure 3 summarizes the significant relationships in the two-way interaction model grouped industry by strategy. No significant relationships were found for the distribution industry. In manufacturing, quality proponents are more likely to survive. In retail, we find price competitors and quality proponents to be prone to discontinuance, whereas a technology value strategy promotes survival. However, technology value is likely to lead to discontinuance in the service industry. The niche purveyor strategy promotes survival in the service industry.

The three-way interaction composed of industry by location by strategy was forced into the model. Although the three-way interaction term was not significant, it was hypothesized that some strategies based on their location and the industry in which the new firm operates would be significantly related to survival chances. Three-way interactions are often difficult to detect in the analysis of large samples. Thus we proceeded to conduct a post hoc analysis to determine if there were any discernible trends in the results recognizing that extrapolation of the results must be treated with caution. Model 8 in Table 3 reports that 10 contrasts were significantly different from the pooled test. For new firms operating in the manufacturing industry, niche purveyors in metro locations have a lower chance of survival ($\beta = -1.409$; $p < .05$). This result suggests that in the manufacturing industry, new firms in metro areas with a niche purveyor strategy decrease their survival chances. That is, a narrow strategic focus, such as niche purveyor, when located in a metro area and in an upstream industry, is more likely to fail than firms pursuing other strategies.

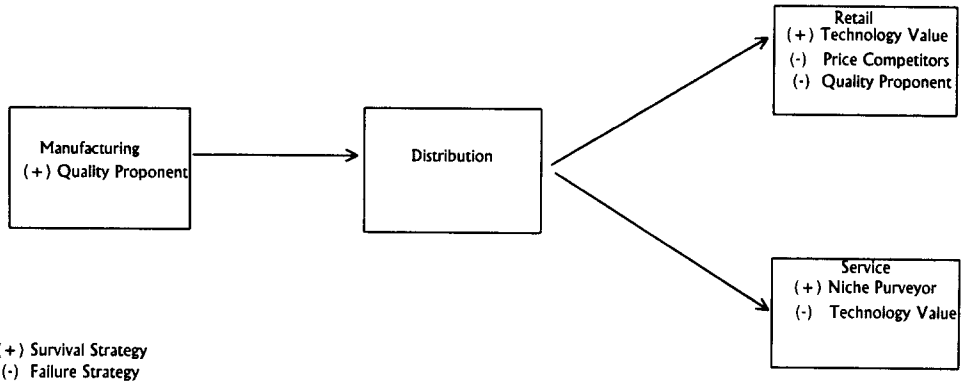

FIGURE 3 Industry by strategy.

No terms for new firms in the distribution industry were found to be significant. In the retail industry, five three-way interaction contrasts are significantly different from the pooled test. New firms with a super achiever strategy (a broad strategic focus) in metro locations had lower chances of survival ($\beta = -.688$; $p < .05$). However, super achievers in rural locations in retail had greater odds of survival ($\beta = .489$; $p < .05$). Price competitors, a narrow strategic foci, had opposite relationships to survival when situated in the same industry and location as super achievers. In metro locations, price competitors have decreased chances of survival ($\beta = -.699$; $p < .05$) and therefore are more likely to discontinue than firms pursuing other strategies. Price competitors in rural locations in the retail industry have higher odds of survival ($\beta = .617$; $p < .10$). Equivocators engaged in retail in rural areas were found to have lower survival chances ($\beta = -.904$; $p < .10$). These findings suggest that for new firms in the retail industry, super achievers in metro locations are more prone to discontinuance as are price competitors. However, in rural locations, only equivocators were found to be more likely to discontinue. On the other hand, super achievers and price competitors were found to have increased chances for survival in retail when they are located in rural areas.

In the service industry, four contrasts were found to be significant in the three-way interaction equation. Niche purveyors are significantly more likely to survive in metro locations ($\beta = 1.398$; $p < .05$), but are less likely to survive in rural locations ($\beta = -.845$; $p < .10$). Also in the service industry, quality proponents are found to have lower odds of survival when located in metro areas ($\beta = -.873$; $p < .05$). Technology value new firms in metro locations have lower chances of survival ($\beta = -.836$; $p < .10$).

To summarize, no relationships in urban locations were found to be significant. Significant contrasts were found, however, in metro and rural locations except in the distribution industry. In manufacturing firms located in metro areas, niche purveyor was found to be a discontinuance strategy. But firms adopting this strategy survive in metro locations when in the service industry. However, a niche purveyor was found to be a discontinuance strategy in the service industry when located in a rural area. This was also true for equivocators. Super achievers and price competitors were found to discontinue in the retail industry for metro locations but survive in retail when situated in a rural setting. Niche purveyors were found to increase survival chances in the service industry when located in metro areas. Quality proponents and technology value new firms in metro locations in the service industry are likely to fail.

DISCUSSION

Our examination of whether the context of new firms influences their future confirms our supposition that survival depends on the interaction of industry, location, and strategy. We found evidence that for firms in downstream industries, the type of strategy chosen by a new firm can significantly predict the likelihood of its survival. However, strategic focus or location seemingly are not critical in manufacturing or distributive services industries.

Our post hoc analysis of the three-way interaction patterns in downstream industries suggests that strategic choice is most apt to be critical in metro and rural settings. In metro locations there appears to be a clear success strategy. New firms pursuing a niche purveyor strategy, whereby firms attempt to emphasize a narrow range of strategic foci, have significantly higher chances of surviving than firms using any other strategy in that locale. Furthermore, this strategy is significantly more effective in the service industry unless it is in a rural setting. It may be that the limitations of resources in a rural setting are too difficult to surmount when pursuing a narrow strategy. Indeed, the two success strategies in rural settings are broader in market scope (super achiever and price competitor). This implies that success in locales where resources are less abundant and diverse requires new firms to "hedge their bets" by emphasizing multiple strategic foci. The lack of significance for the three-way interaction term, however, makes these conclusions speculative.

Two interesting "non-results" emerge from the analysis. One concerns the lack of urban settings, when combined with strategy and industry, having an impact on survival chances. It may be that the munificence in urban settings, provided by greater abundance of labor, capital, information, or materials, buffers new firms from having to choose particular segments for targeting their strategies. Instead, new firms may be prone to fail in urban settings because of competitive density rather than the selection of a strategy or placement in the industry chain. As we did not assess density, the speculation must be treated in a subsequent study.

A second non-result emerges from the lack of significant effects on survival for new firms in such upstream industries as manufacturing and distribution. Not only are the industries themselves poor predictors of survival but they fail to predict survival when combined with strategy or location. We suspect that this outcome is a result of the way new firms in upstream industries are capitalized and how they interface with their environment. We suggest that new firms in manufacturing, for instance, have greater need for access to capital than do new firms in retail or service. This access to capital provides stronger buffers from the forces of discontinuance and therefore survival is a function of events other than those included in this analysis. We suggest that the interface with the environment, specifically with buyers and suppliers, is much different than for new firms in downstream industries who have buyers and suppliers that are usually more diverse and varied in their relationships with the firms over time. Manufacturing new firms, for instance, often have few buyers and suppliers that share information about needs and demands. Although these relationships can make the new firm dependent on large suppliers and buyers, it also provides a degree of stability to the activities of the firm. Hence, discontinuance may be more a function of the relationships with buyers and suppliers than with location or strategy.

This preliminary investigation offers encouragement for further exploration of the interaction between the context of new firms and their chances of survival. The next step must include a measure of new firm infrastructure that may influence the pattern of effects that were discerned. In particular, the stock of resources a new firm brings to the founding process will be of interest, such as the size of the founding team, initial financial resources, and number of personnel. We also believe that the research can inform those interested in

survival of new firms. New firms do have patterns of survival and discontinuance. However, those patterns are not generic to all new firms and apparently coincide with the context in which the new firm operates.

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APPENDIX: Results Of Logit Regression

Variables	β	SE
Age	−.123[d]	.031
Locate	[a]	
Urban	−.213[b]	.092
Metro	.197	.135
Rural	.016	.109
Industry	NS	
Strategy	[b]	
Super achiever	−.024	.118
Quality Proponent	−.247	.155
Equivocator	.016	.166
Price Competitor	−.435[c]	.136
Niche Purveyor	.219	.177
Technology Value	.471[b]	.222
Industry × Strategy	[b]	
Manufacturing × Super achiever	−.047	.259
Manufacturing × Quality proponent	.969[b]	.444
Manufacturing × Equivocator	.013	.345
Manufacturing × Price competitor	.168	.305
Manufacturing × Niche purveyor	−.665	.443
Manufacturing × Technology value	−.439	.375
Distribution × Super achiever	−.028	.232
Distribution × Quality proponent	.155	.356
Distribution × Equivocator	−.001	.334
Distribution × Price competitor	.016	.261
Distribution × Niche purveyor	.137	.431
Distribution × Technology value	−.278	.436
Retail × Super achiever	.202	.180
Retail × Quality proponent	−1.116[d]	.318
Retail × Equivocator	.161	.412
Retail × Price competitor	−.497[b]	.230
Retail × Niche purveyor	−.361	.259
Retail × Technology value	1.611[c]	.544
Service × Super achiever	−.126	.197
Service × Quality proponent	−.008	.269
Service × Equivocator	−.173	.331
Service × Price competitor	.313	.270
Service × Niche purveyor	.889[b]	.392
Service × Technology value	−.894[c]	.343
Location × Strategy	NS	
Industry × Location	NS	
Industry × Location × Strategy	NS	
Man × Urban × Super achiever	−.121	.302
Man × Urban × Quality proponent	−.525	.471

(Continued)

APPENDIX: Results Of Logit Regression *(Continued)*

Variables	β	SE
Man × Urban × Equivocator	.096	.399
Man × Urban × Price competitor	−.267	.346
Man × Urban × Niche purveyor	.586	.485
Man × Urban × Technology value	.231	.409
Man × Metro × Super achiever	.609	.408
Man × Metro × Quality proponent	1.070	734
Man × Metro × Equivocator	−.331	548
Man × Metro × Price competitor	.335	.461
Man × Metro × Niche purveyor	−1 409[b]	.699
Man × Metro × Technology value	−.274	.526
Man × Rural × Super achiever	−.488	345
Man × Rural × Quality proponent	−.545	.572
Man × Rural × Equivocator	.235	.497
Man × Rural × Price competitor	−.068	.454
Man × Rural × Niche purveyor	.823	615
Man × Rural × Technology value	.043	.561
Distribution × Urban × Super achiever	−.099	.271
Distribution × Urban × Quality proponent	−.192	.398
Distribution × Urban × Equivocator	−.150	.377
Distribution × Urban × Price competitor	.102	.306
Distribution × Urban × Niche purveyor	.054	.487
Distribution × Urban × Technology value	.286	.498
Distribution × Metro × Super achiever	.151	.394
Distribution × Metro × Quality proponent	279	.606
Distribution × Metro × Equivocator	−.438	.529
Distribution × Metro × Price competitor	−.051	.405
Distribution × Metro × Niche purveyor	.130	.739
Distribution × Metro × Technology value	−.071	.688
Distribution × Rural × Super achiever	−.052	306
Distribution × Rural × Quality proponent	−.086	.484
Distribution × Rural × Equivocator	.588	.508
Distribution × Rural × Price competitor	−.051	.389
Distribution × Rural × Niche purveyor	−.183	.566
Distribution × Rural × Technology value	−.216	.659
Retail × Urban × Super achiever	.199	.209
Retail × Urban × Quality proponent	.350	.369
Retail × Urban × Equivocator	.104	.443
Retail × Urban × Price competitor	.082	.291
Retail × Urban × Niche purveyor	**−.087**	**.231**
Retail × Urban × Technology value	−.648	.563
Retail × Metro × Super achiever	−.688[b]	278
Retail × Metro × Quality proponent	−.475	.502
Retail × Metro × Equivocator	.800	.719
Retail × Metro × Price competitor	−.699[b]	.249
Retail × Metro × Niche purveyor	−.118	.336
Retail × Metro × Technology value	1.181	.815
Retail × Rural × Super achiever	.489[b]	.245
Retail × Rural × Quality proponent.	.125	.449
Retail × Rural × Equivocator	−.904[a]	.504
Retail × Rural × Price competitor	.617[a]	.324
Retail × Rural × Niche purveyor	.205	263
Retail × Rural × Technology value	−.533	.680
Service × Urban × Super achiever	.022	.228
Service × Urban × Quality proponent	.367	.280
Service × Urban × Equivocator	−.050	.354
Service × Urban × Price competitor	.082	.304
Service × Urban × Niche purveyor	−.552	.431
Service × Urban × Technology value	.131	.353
Service × Metro × Super achiever	−.073	.312
Service × Metro × Quality proponent	−.873[b]	.404
Service × Metro × Equivocator	−.032	.533

(Continued)

APPENDIX: Results Of Logit Regression *(Continued)*

Variables	β	SE
Service × Metro × Price competitor	.416	.445
Service × Metro × Niche purveyor	1.398[b]	.705
Service × Metro × Technology value	−.836[a]	.479
Service × Rural × Super achiever	.051	.278
Service × Rural × Quality proponent	.506	.380
Service × Rural × Equivocator	.032	.479
Service × Rural × Price competitor	−.498	.385
Service × Rural × Niche purveyor	−.845[b]	.497
Service × Rural × Technology value	.706	.502
Constant	11.227[d]	2.521
−2 LL	1998.703[d]	
DF	1715.0	
X^2	27.795	
GOOD	1800.219[a]	

[a] $p < .10$
[b] $p < .05$
[c] $p < .01$
[d] $p < .001$
NS, not significant; SE, standard error.