Antecedents of Small Business Performance

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This article focuses on what makes small businesses successful and whether consistent patterns of success can be identified. It improves upon previous work by using a significantly larger sample size, representing a large array of industries across the United States, and utilizing multiple performance measures. Results indicate that owner/manager education, owner/manager experience, and record-keeping classification have some effect on small firm performance as measured by return on assets, return on equity, return on sales, and return on cash flow. However, gender and legal structure were found to be relatively unimportant. Implications are suggested.

What makes some small businesses more successful than others? The answer to this question is particularly important to the stability and health of the U.S. economy since small firms account for approximately two-thirds of all new jobs (Capell, 1995). Past research on small business outcomes has generally followed three streams of analysis: successful firms, failed or bankrupt firms, and a comparison between failed and successful firms. Success research focuses on the events and factors surrounding successful firms (Cragg and King 1988; Ibrahim and Goodwin 1986). Failure studies look at unsuccessful firms and examine the characteristics of such ventures (Bruno and Leidecker 1988; Gaskill, Van Auken and Manning 1993). Lastly, success versus failure literature focuses on comparisons between successful and failed firms and discusses possible precursors to these outcomes. Success research is the easiest to measure by degrees of the three analysis methods. Therefore, for the purpose of this presentation, this article will follow the success research model.

Using a national sample of small businesses, this study identifies antecedents of small businesses success as measured by return on assets (ROA), return on equity (ROE), return on sales (ROS), and return on cash flow (ROCF). Investors, public policy-makers, and prospective entrepreneurs place significant emphasis on finding factors that may provide insight into the potential viability of new ventures. Numerous studies in the academic and practitioner press have attempted to identify antecedents of success with mixed results. This article contributes to the literature by testing these antecedents with a large sample over a broad range of geographic regions and industries.

Previous Research

A review of the small business success literature reveals three categories of antecedents: individual characteristics, firm characteristics, and environmental characteristics (Baron and Markman 2000; Solymossy 1998; Bouchikhi 1993; Cragg and King 1988; Foley 1985). Additionally Cooper, Woo, and Dunkelberg (1989) point out that it is important to examine heterogeneity in small firm research. Since the intent here is to isolate individual and firm level antecedents, this research will follow the above model by studying individual and firm characteristics as predictors and environmental characteristics as controls. A summary of some of the most relevant empirical research is given in Exhibit 1.

Characteristics of the Owner/Manager

Individual characteristics are those attributes possessed by the owner/manager. The primary demographic characteristics found important in previous research include age, education, managerial experience, industry experience, and gender (Foley 1985; Begley and Boyd 1986; Lussier 1995a; Steiner and Solem 1988). Others, such as Baron and Markman (2000) suggest that success goes beyond the traditional demographic characteristics—success is more a function of the small businessperson's social skills, as gained through reputation, relevant experience, and direct personal contacts. Still others, such as Morris and Zahra (2000) suggest that perhaps the firm owner's adaptive behavior and willingness to take risk is more likely to determine success rather than individual traits. Indeed by linking attribution of organizational success to certain personal qualities of the owner/manager "or other 'great men' seems to correspond to a naïve layman perspective" (Preisendorfer and Voss 1990, p. 109). Clearly, the diversity of owner/managers operating in a wide variety of small businesses likely suggests countless demographic combinations (Morris and Zahra 2000). This may explain the somewhat inconclusive results as noted below of previous research on antecedents of small business performance.

In their study of 97 firms of less than 500 employees Miller and Toulouse (1986) found management experience was important to small business success. Specifically, they found owners/managers with previous experience were more successful than their counterparts. Likewise, Steiner

Exhibit 1
Summary of Studies on Antecedents of Business Success

Study	Sample Size	Scope of Sample	Analysis	Research Model	Sampling Methodology	Success Predictors (Results)
Lussier (1995)	216	Six New England states	Logit	Success vs. Failure	Mail Questionnaire	Planning Professional Advisors Owner Education Staffing Level
Yusuf (1995)	220	South Pacific entrepreneurs	Descriptive	Success	Survey	Good Management Government Support Good Marketing Overseas Exposure Education Financial Stability Prior Experience Political Affiliation
Olson and Bokor (1995)	121	Inc. 500 firms	Regression	Success	Survey	Innovation/planning interaction
Sage (1993)	184	Oklahoma	Descriptive	Success	Interviews	Ease of Entry Optimism Education Unemployment
Dyke, et al (1992)	386	Various industries	Regression	Success	Dun and Bradstreet database	Industry experience Start-up experience
Preisendorfer and Voss (1990)	78,441	New businesses in Munich, Germany and Upper Bavaria	Event-history analysis	Success vs. Failure	Business Registrations	Age
Cragg and King (1988)	179	East Midlands region of England	Stepwise Regression	Success	Mail Questionnaire	Age of Entrepreneur Age of Firm Desire for Growth
Steiner and Solem (1988)	30	Northern Wisconsin firms	Descriptive	Success	Personal Interviews	Management characteristics Operating characteristics Competitive strategy
Ibrahim and Goodwin (1986)	74 70	Montreal Replicated in two northeastern cities	Factor Analysis	Success	Mail Questionnaire Interviews (20 percent of sample)	Entrepreneurial Behavior Managerial Skills
Robinson et al (1986)	81	Food retailers	Regression	Success	Mail Questionnaire	Operational Planning
Miller and Toulouse (1986)	97	Various industries	Correlations	Success	Personal Interviews	Product-market strategy CEO years in firm Use of Experts
Riggs and Bracker (1986)	183	Dry cleaning firms	MANOVA	Success	Mail Questionnaire	Forecasting and Aggregate Planning
Ackelsberg (1985)	135	Various industries	Descriptive	Success	Mail Questionnaire	Planning
Foley (1985)	61 electrical engineers	Various industries	Stepwise regression	Success	Personal Interview	Size of business Age of Controller Marketing policies
Van de Ven, et al (1984)	14	Educational software firms	Regression	Success	Personal Interviews and Questionnaires	Education Experience Locus of control Clear business idea Personal investment
Cooper and Bruno (1977)	250	San Francisco	Descriptive	Success	Interviews	Groups of founders

and Solem (1988) found that successful owner/managers of 30 small manufacturing companies had prior experience in related industries. These results are indirectly supported by Baron and Markman (2000) who believe that social skills, partially developed by relevant experience, assists the small businessperson in gaining access to such things as venture capitalists and potential customers which, in turn, supports small business success. However, Dyke, Fischer, and Reuber (1992) found contradictory results. In a study of 386 small firms, they found that both previous business ownership experience of the owner/manager was relatively unrelated to firm performance. It has been suggested that characteristics traditionally thought to be favorable, such as experience, can sometimes cause owner/managers to become myopic and "inertial" in managing their organizations. While this may be acceptable in the larger firm, myopic behavior may result in a total lack of dissenting opinions within a small business. This complacency, coupled with the general uncertainty inherent in a small business, could be a business liability. This can be of particular concern in manager-controlled firms (Jensen and Meckling 1976; Oswald and Jahera, 1990). Still, considering the lack of consistency in the literature, this research posits:

Hypothesis 1: Previous management experience of the small businessowner/manager is positively correlated to firm performance

Education has been proposed as a possible antecedent of small business success. Some entrepreneurial research would suggest that successful small business owners were not particularly successful in school and dropped out of college to start a business. For example, in a study of 216 small business owners, Lussier (1995a) found education to be a statistically significant characteristic of the owner in predicting firm financial success. Specifically, in his meta-analysis, he found that entrepreneurs with less than three years of college were more successful in their small business ventures than those with more than three years of college. On the other hand, Cooper, Gascon, and Woo (1991) found support for the fact that people starting businesses who have no college education had a greater chance of failure than those with one or more years of college. Still others, like Steiner and Solem (1988), found that education of the owner had no relationship to small business success. Likewise, Dyke, Fischer, and Reuber (1992) found that the educational level of the owner/manager was relatively unrelated to firm performance. Again, the mired results lead the current research to posit:

Hypothesis 2: Education level of the small business owner/manager is positively correlated to firm performance.

Previous comparative studies of male and female small businesses revealed that female-owned businesses were financially less successful as male-owned businesses (Hisrich and Brush 1986; Longstreth, Stafford, and Mauldin 1987; Welsch and Young 1983). Specifically, Brush (1992) submitted that female owners were more likely to focus on goals other than financial performance. Goch (1997) who contends that female managers are more comfortable with the personal and empathetic side of the business might further support these findings. On the other hand, some researchers suggest that women tend to be more committed to their employees (Altany 1993). Organizational behavioralists might argue that this management commitment would lead to greater employee commitment which should, in turn, equate to a more successful company. While the commitment/success argument is ever present in the literature, the current study found little support as it relates to female- verse male-owned businesses. For this reason, the researchers posit:

Hypothesis 3: Small businesses owned/managed by males perform better than those firms owned/managed by females.

Firm Characteristics

Firm characteristics are those characteristics such as strategy/structure, competitive orientation, and policy that are specific to the firm itself (Solymossy 1998; Appiah-Adi 1997). Other factors commonly identified in the literature are legal structure, geographic location, accurate record keeping, and financial control (Lussier 1995b; Cragg and King 1988). With regard to legal structure, research suggests that the majority of all new ventures are founded by a team or individuals rather than one individual (Baron and Markman 2000). Specifically, Inc. magazine found that 57 percent of the 500 high-growth companies surveyed were started by at least two founders (Teach, Tarpley, and Schwartz 1986). Given these statistics, Cooper and Bruno (1977) found that an organization with more than one founder was more likely to be successful than a firm started by one individual. The reason for this may be nothing more than the presence of additional start-up capital, or it may be the result of broader intellectual and experiential pillar on which the build the enterprise. Conversely, Preisendorfer and Voss (1990) caution that organizations are political entities and that internal politics rather than concrete planning or experience may have more bearing on firm success. Specifically, the authors suggest that internal politics could lead to disagreement among managers as to how to run the firm. With a proprietorship, one person performs all the functions required for the successful operation of the business. The proprietor secures the capital, establishes and operates the business, assumes

all risks, accepts all profits and losses, and pays all taxes. The authors would suggest that this may be less risky than the politics and potential conflicts involved in partnerships or S-corporations. Given the lack of conclusive evidence, the researchers posit:

Hypothesis 4: Firms that are organized as proprietorships will perform better than firms organized as corporations or partnerships.

Robinson (1986) found operational planning to be highly correlated to firm performance; however, in the same study, he found strategic planning to have no impact. Lussier (1995a and b), in a study of New England businesses, found that firms with more detailed business plans were more likely to succeed than firms with less detailed plans or no plans. Likewise, he found that firms that did not keep updated accurate records and lacked financial controls were less likely to succeed than firms with well-kept records and financial controls (Lussier 1995b). Frese, van Gelderen, and Ombach (2000) suggest that complete planning, as suggested by Lussier (1995) may be too rigid toward environmental demands for small businesses; however, critical point strategy is positively related to success. According to Frese, van Gelderen, and Ombach (2000), critical point strategy "concentrates on the most difficult, most unclear, and more important points first. This approach constitutes an iterative problem solving strategy, one has a clear goal in mind and concentrates on the tasks relevant to it" (p. 2). This type of planning cannot be accomplished without accurate and continual environmental scanning and subsequent continual documentation. This documentation involves keeping records over time of both internal and external factors. For this reason, strategic/critical planning can be considered a proxy for record keeping. However, in a contrasting study of 179 metal good manufacturers, Cragg and King (1988) found the presence of a written business plan to be negatively correlated with firm performance, as measured by net profit change. This suggests that the reactive strategy, as noted by Frese, van Gelderen, and Ombach (2000), where virtually no planning is done or documentation recorded, might be best suited for small businesses. In light of these conflicting findings, the researchers posit:

Hypothesis 5: Firms that keep accurate documentation perform better than firms without accurate records.

Summary

As is evident from the previous studies, there exists no consistency in terms of what antecedents best predict firm success. Further, most of the studies, with the exception of Preisendorfer and Voss (1990), are limited to small sample sizes, limited geographical areas, and one or two industries. While the Preisendorfer and Voss (1990) study employs a large sample size, the sample is limited to Munich, Germany, and western Bavaria. Further, this study only focuses only on the owner/manager age variable.

Methodology

This section examines the methodology used in the present study, including the sample, performance measure, independent variables, environmental controls, and analysis.

Sample

The sample used in this study is taken from the National Survey of Small Business Finances (NSSBF). The survey was conducted during 1994–95 for the Board of Governors of the Federal Reserve System and the U.S. Small Business Administration. The target population is all for-profit, nonfinancial, nonfarm business enterprises that had fewer than 500 employees and were in operation as of year-end 1992. The sample was drawn from firms listed on the Dun's Market Identifier file as of November 1993. The public-use dataset contains 4,637 firms. These firms represent 4.99 million small businesses. In this study, small business is defined in accordance with the Small Business Administration general guidelines as those having less than 500 employees and less than $5,000,000 in total sales.

Performance Measure

The dependent variable of interest in this study is the measure of firm performance. It is generally accepted that performance should be measured by several indicators (Morash, Droge, and Vicker, 1996; Shane and Kolnereid, 1995). In this research, ROA, ROS, ROCF, and ROE are used to assess firm performance. ROA, ROS, and ROE are the most extensively used measures of performance and have been found to be related to a variety of other indicators of financial performance for a wide range of firms (Keats and Hitt 1988; Brown, Gatain, and Hicks 1995). ROCF (cash/sales) was used because it factors out accounting accruals that can distort performance in the short run (DeDee and Vorhies 1998).

While there is considerable controversy over the use of accounting measures, as opposed to capital market measures, in strategy research, there is evidence that ROA, ROE, and ROS are highly correlated to the market value of a firm (Ball and Brown 1968; Gonesdes 1973). In general, as noted by Robins and Wiersema, (1995), "the use of ROA as a performance measure allows the results of the analysis to be directly compared with a substantial body of work on related topics in strategy" (p.290).

It is expected that firm age will have some affect on the chosen performance variables. Older firms generally have

had more time to develop sales, equity, assets, and cash (Dyke, et al. 1992). For this reason, the researchers control for firm age (years since the firm was founded, purchased or acquired) (Delaney and Huselid 1996).

Finally, to overcome the problem of skewness displayed by the performance variables, logarithmic transformations are used.

Independent Variables

Independent variables of interest, owner age, education, experience, gender, documentation, and legal structure (described in Exhibit 2) are those factors previously found to be antecedents of firm performance.

Dummy variables are created for all dichotomous variables to represent membership into that category. For example, for the variable proprietorship, 1 = the business is classified as a proprietorship, and 0 = other classification. The coding for each of the dichotomous variables can also be found in Exhibit 2.

Environmental Controls

The effect of environmental characteristics on the small firm has not been well established in the literature. One school of thought suggests that high environmental munificence, the magnitude of the business opportunity available for exploitation, is highly correlated to future profitability in young firms (Beard and Dess 1981; Castrogiovianni 1996). Simply put, companies that exist in growing, attractive environments should have an easier chance at survival. This logic is consistent with Harrigan's (1982) work on declining industries. From an empirical standpoint there appears to be a void in the literature. In fact, numerous scholars have indicated a need for success research across a wide spectrum of industries (Ibrahim and Goodwin 1986; Cragg and King 1988) in an effort to determine any industry-effect on performance.

Conversely, there is a growing body of literature to support the fact that the industry itself has little or no relationship to the success of a firm. Specifically, industry life-cycle theory posits that growing industries undergo a shakeout period (Klepper and Graddy 1990). Others suggest that standardization may force businesses out of the industry

Exhibit 2
Independent Variable Definitions

Variable	Definition
Controls	
Firm Age	The time (in years) since the firm was founded, purchased, or acquired.
East North Central	Company was headquartered in this region=1, other=0
East South Central	Company was headquartered in this region=1, other=0
Middle Atlantic	Company was headquartered in this region=1, other=0
Mountain	Company was headquartered in this region=1, other=0
New England	Company was headquartered in this region=1, other=0
Pacific	Company was headquartered in this region=1, other=0
South Atlantic	Company was headquartered in this region=1, other=0
West North Central	Company was headquartered in this region=1, other=0
Construction	Company's SIC code fell into this category=1, other=0.
Manufacturing	Company's SIC code fell into this category=1, other=0.
Wholesale & Retail Trade	Company's SIC code fell into this category=1, other=0.
Service	Company's SIC code fell into this category=1, other=0.
Finance, Insurance & Real Estate	Company's SIC code fell into this category=1, other=0.
Independents	
Owner age	Owner's age (in years)
Owner Experience	Owner's experience in managing or owning a business (in years)
Gender	Firm is over 50% owned by female(s)=1, male=0
Documentation	An index between 0 and 1 indicating thoroughness of documentation
High School Degree	Owner's education fell into this category=1, other=0
College Degree	Owner's education fell into this category=1, other=0
Post Graduate Degree	Owner's education fell into this category=1, other=0
Proprietorship	Firm is organized with this structure=1, other=0
Partnership	Firm is organized with this structure=1, other=0
Scorp	Firm is organized with this structure=1, other=0

(Utterback and Suarez 1993). The primary theme behind this argument is that firm success or failure can occur in both growing and declining industries—declining industries do not automatically imply business failure. The ecological approach to the role of environment would suggest that to a large extent, organizational outcomes and performance are out of the control of businesses (Preisendorfer and Voss 1990). It is further argued that these factors (business cycles, demand fluctuations, etc.) are more damaging to big businesses that have a greater stake in the industry.

A similar situation exists with respect to region. Because there has been little research studying small business performance across regions, researchers have called for such analysis (Cragg and King 1988; Gaskill, Van Auken, and Manning 1993). This lack of research makes generalizations with regard to region difficult at best.

For this reason, the researchers control for both industry and region. Eight dummy variables were used to classify industry as construction, transportation, manufacturing, wholesale, retail, service, financial, and utilities as the null classification. To illustrate, for the variable construction, 1 = the business is in the construction industry, and 0 = other classification.

Likewise, nine dummies were used to control for region. Failure to account for geographic location is a significant weakness in most small business success works (Cragg and King 1988; Gaskill, Van Auken and Manning, 1993). Regions were designated as East North Central region, East South Central region, Middle Atlantic region, Mountain region, New England region, Pacific region, South Atlantic region, West Northcentral US region, and West South Central as the null category. Again, to illustrate, for the variable East North Central, 1 = the business is located in the East North Central area of the United States, and 0 = other classification. Dummy variables are created for all dichotomous control variables to represent membership into that category. The coding for each of the dichotomous variables can also be found in Exhibit 2.

Analysis

The data were modeled in an ordinary least squares hierarchical regression framework. The control variables were entered first followed by the variables of interest. Hierarchical regression adds to the researcher's understanding of the data by providing a unique partitioning of the total variance explained by variables of interest, and is one of the most powerful tools for extracting unique variance (Cohen and Cohen 1983).

Results

Descriptive statistics are presented in Exhibit 3. The data shows 2,966 owners represented in this study were male and 717 were female. Owner age ranged from 19 to 92 with a mean age of 49.38. Of the owners represented, 171 reported they had not completed high school, 775 had only a high school degree, 924 had some college, 1,046 had a college degree, and 767 had a post-graduate degree. The average number of years of work experience was 18.82 with a range from less than a year to 70 years. In terms of structure, 1,401 reported being a proprietorship, 272 a partnership, 806 an S-corporation, and 1,204 a C-Corp. The firms represented in the study were dispersed across the United States: 565 in east northcentral region; 210,

Exhibit 3
Descriptive Statistics and Correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1 ENC	0.15	0.36																								
2 ESC	0.06	0.23	-0.10																							
3 MA	0.12	0.33	-0.16	-0.09																						
4 M	0.06	0.23	-0.10	-0.06	-0.09																					
5 NEWENG	0.06	0.23	-0.11	-0.06	-0.09	-0.06																				
6 SA	0.17	0.38	-0.19	-0.11	-0.17	-0.11	-0.11																			
7 WNC	0.08	0.27	-0.12	-0.07	-0.11	-0.07	-0.07	-0.13																		
8 WSC	0.11	0.31	-0.15	-0.09	-0.13	-0.09	-0.09	-0.16	-0.10																	
9 MIN/CONST	0.13	0.33	0.00	0.03	-0.04	-0.01	0.00	0.04	-0.02	0.01																
10 MANUFAC	0.10	0.30	0.04	0.00	0.02	-0.04	0.02	-0.03	-0.02	-0.03	-0.13															
11 WHOLESAL	0.30	0.46	-0.01	0.01	0.02	-0.01	-0.01	-0.01	0.00	0.01	-0.25	-0.22														
12 FINANCE	0.07	0.25	0.01	-0.01	-0.03	0.02	0.00	0.01	0.03	-0.02	-0.10	-0.09	-0.18													
13 UTILITY	0.03	0.18	-0.02	0.02	-0.01	0.00	-0.01	0.01	0.03	0.00	-0.07	-0.06	-0.12	-0.05												
14 HSDEGREE	0.21	0.41	0.03	0.01	0.02	-0.04	0.04	-0.03	0.05	-0.01	0.11	0.00	0.04	-0.05	0.00											
15 COLLDEGR	0.28	0.45	-0.02	0.01	0.00	0.03	0.00	0.03	-0.02	-0.01	-0.06	0.01	0.04	0.09	0.01	-0.33										
16 POSTGRAD	0.21	0.41	0.02	-0.01	0.00	-0.02	0.00	-0.01	-0.02	-0.01	-0.13	-0.01	-0.13	0.01	-0.05	-0.26	-0.32									
17 FEMALE	0.19	0.40	0.00	-0.03	-0.04	0.04	0.00	-0.02	-0.02	0.04	-0.10	-0.02	0.04	-0.03	0.01	0.02	-0.01	-0.04								
18 PROPRIET	0.38	0.49	-0.05	-0.01	-0.03	0.03	-0.04	-0.08	0.03	0.05	0.02	-0.11	-0.03	-0.03	-0.06	0.07	-0.12	-0.05	0.06							
19 PARTNER	0.07	0.26	0.02	-0.02	0.01	-0.02	0.01	-0.04	0.00	0.01	-0.04	0.00	-0.01	0.05	-0.02	0.01	-0.03	0.03	0.01	-0.22						
20 SCORP	0.22	0.41	-0.01	0.02	0.03	-0.01	0.04	0.07	-0.02	0.00	-0.01	0.04	0.00	0.02	0.02	-0.06	0.08	-0.01	-0.02	-0.41	-0.15					
21 RECORDNO	0.52	0.50	0.00	0.00	-0.02	-0.02	-0.01	0.02	-0.01	0.03	0.02	0.00	0.05	-0.04	-0.01	0.06	-0.05	-0.03	0.00	0.09	0.01	-0.02				
22 FIRMAGE	14.15	12.18	0.04	0.00	0.01	-0.03	0.02	-0.02	0.05	-0.03	0.00	0.07	-0.05	0.06	-0.01	0.03	-0.04	0.02	-0.08	-0.02	-0.02	-0.09	-0.05			
23 EXPER	18.82	11.04	0.02	0.02	0.03	-0.01	0.00	-0.02	0.03	-0.02	-0.01	0.06	0.00	0.08	0.02	0.05	-0.05	-0.02	-0.16	-0.07	-0.01	-0.03	-0.04	0.54		
24 OWNAGE	49.38	11.30	0.03	0.00	-0.02	-0.01	-0.02	-0.02	0.01	-0.01	-0.07	0.06	-0.03	0.08	0.01	0.04	-0.06	0.03	-0.07	-0.02	0.01	-0.07	-0.07	0.48	0.70	

N=3683

east southcentral region; 460, mid-Atlantic region; 211, mountain region; 213, New England region; 706, Pacific region; 624, south-Atlantic region; 285, west northcentral region; and 409, west southcentral region. Firms, likewise, were well distributed across industries. SIC codes were used to classify the firms into five areas: 462 were in construction and mining; 377, manufacturing; 125, utilities; 1,090, wholesale and retail; 256, finance, insurance, and real estate; and 1,373, service industries.

A correlation matrix is also presented in Exhibit 3. The highest correlation is between owner age and experience at 0.70. This high intercorrelation is not surprising since one would intuitively associate greater experience with greater age. To avoid any inherent statistical problems, the researchers retain only the variable "experience" in the regression model. All other correlations are 0.55 or lower. These relatively low correlations indicate that the variables are independently measuring different aspects of firm success. While generalities can be drawn from the correlation matrix, a model, which includes all possible explanatory variables, must be employed before conclusions can be drawn.

Model Results

Model results are presented in Exhibit 4. Each of the models for the dependent variables ROA, ROE, ROS, and ROCF are significant at the $p < 0.05$ level. F-statistics were 15.57 for the ROA model; 12.27, ROE; 25.89, ROS; and 5.46, ROCF. The R-squared ranged from 6 percent for the ROCF model to 19 percent for the ROS model. A discussion of the findings of each of the five hypotheses follows.

Hypothesis 1: Previous management experience of the small business owner/manager is positively correlated to firm performance

The results of all four models study showed no support for Hypothesis 1. Interestingly the sign on the coefficient for owner/manager experience was statistically significant but negative for all four performance measures, indicating the owners/managers with less experience outperformed their more experienced counterparts. While these findings are consistent with Van de Ven, Hudson and Schroeder (1984), the authors attribute their results to multicollinearity. In this study, they eliminated concerns of multicollinearity.

Hypothesis 2: Education level of the small business owner/manager is positively correlated to firm performance.

The second hypothesis submitted that education level is positively correlated to firm performance. The results indicated partial support for Hypothesis 2 but only for the ROE model. Specifically, the sign on the coefficient for college degree was positive and statistically significant ($p < .05$). This suggests that the businesses where the owner/manager reported having a college degree were more successful (as determined by ROE) than those firms where the owner/manager had no degree. Further, for those firms where the owner/manager had a post-graduate degree, no significant difference in performance was noted. These findings support the work of Lussier (1995a).

Hypothesis 3: Small businesses owned/managed by males perform better than those firms owned/managed by females.

No support was found in any of the four models for Hypothesis 3. Contrary to the findings of Hisrich and Brush (1986), Logstreth, Stafford, and Mauldin (1987), and Welsch and Young (1983), in the present study gender had no statistically significant effect on any of the measures of performance.

Hypothesis 4: Firms that are organized as proprietorships will perform better than firms organized as corporations or partnerships.

Contrary to Hypothesis 4, the results indicated that businesses organized as proprietorships did not perform better than partnerships or S-corporations. For all four performance variables, the signs were positive and significant on the coefficients for proprietorship ($p < .00$) and for partnership ($p < .00$ for ROA; $p < .03$, ROE; $p < .00$, ROS; $p < .01$, ROCF), suggesting that there is no performance difference between various legal structures. Specifically, for the independent variable S-corporation, the sign on the coefficient was positive and significant ($p < .00$, ROA; $p < .01$, ROE; $p < .00$, ROS) for three of the four performance variables. Statistical significance for S-corporation was not found for the ROCF model. These results support Lussier (1995a) who suggested that the specific type of legal structure was not important in determining small business success.

Hypothesis 5: Firms that keep accurate documentation perform better than firms without accurate records.

Finally, no support was found for Hypothesis 5. Surprisingly, the documentation variable was significant at the ($p < .00$) level but positive for all four models. These results suggest that firms that do not have specific record keeping procedures outperformed those with well-specified record keeping procedures. This supports Olson and Bokor's (1995) contention that formal record keeping does not enhance firm performance.

Discussion and Limitations

The findings in this study suggest that individual and firm-level factors are associated with firm performance as mea-

Exhibit 4
Model Results

	ROA		ROE		ROS		ROCF	
Term	Beta Coefficients	R^2	Beta Coefficients	R^2	Beta Coefficients	R^2	Beta Coefficients	R^2
STEP 1								
East South Central	-0.18		0.19		-0.08		-0.14	
Middle Atlantic	0.07		0.00		0.04		-0.16	
Mountain	-0.21		0.28		0.01		-0.22	
New England	-0.08		-0.01		-0.17		-0.05	
Pacific	-0.07		0.00		-0.02		-0.40**	
South Atlantic	-0.04		0.19		0.01		-0.16	
West North Central	-0.10		-0.03		-0.05		0.11	
West South Central	-0.02		0.02		0.03		-0.33	
Mining/Construction	-0.12		-0.28		-0.14		-0.64**	
Manufacturing	-0.58*		-0.60**		-0.16**		-0.42**	
Utilities/Transportation	-0.96**		-0.73**		-0.82**		-1.24**	
Financial/Insurance	-1.28**		-1.28**		-0.86**		-1.95**	
Service	-0.76**	0.11	-0.92**	0.09	-0.74**	0.17	-1.37**	0.05
STEP 2								
High School Degree	0.17		0.26		0.05		0.26	
College Degree	0.21		.36*		0.1		0.3	
Post Graduate Degree	0.22		0.16		0.17		0.26	
Experience	-.02**		-.02**		-.01*		-.01*	
Female	-0.04		-0.04		-.07**		-0.14	
Proprietorship	.79**		.72**		.89**		.64**	
Partnership	.42**		.31*		.77**		.46*	
S-corporation	.30**		.26*		.24**		0.21	
No Documentation	.62**	0.12	.53**	0.11	.73**	0.19	.42**	0.06
Change in R^2		0.01		0.02		0.02		0.01

*p<. 05. **p<. 00

sured by ROA, ROE, ROS, and ROCF. Interestingly, the most compelling finding and major contribution of this study is that both the presences of previous experience and documentation had the opposite of expected effect on firm performance. Specifically, according to the data, businesses that had no detailed records or documentation and thus did no obvious planning outperformed those businesses with established documentation and planning procedures. Olson and Bokor (1995) found in a survey of high performing firms that half of these firms did not have a formal business plan. Perhaps as noted by Frese, van Gelderen, and Ombach (2000) planning is too confining for small businesses. However, for the sample, and contrary to Frese, van Gelderen, and Ombach, no level of documentation/critical point thinking seems to be related to firm success. Perhaps contrary to most strategy literature, the ability to be reactionary and unstructured in a dynamic environment is the key to small business success.

Another interesting finding was that those firms where the owner/manager had less experience outperformed those firms where the owner/manger was experienced. Perhaps these outcomes are related. It may be implied that owner/managers who are more flexible and "seat-of-the-pants" oriented (reactionary and unstructured) have more success in an unpredictable environment. Carland, Hoy, Boulton, and Carland (1984) describe a small business

owner as "an individual who establishes and manages a business for the principal purpose of furthering personal goals. The owner perceives the business as an extension of his personality, intricately bound with family needs (p. 23–24). On the other hand, the authors posit that an entrepreneur is different. "An entrepreneur is an individual who establishes and manages a business for the principal purposes of profit and growth. The entrepreneur is characterized by innovative behavior and will employ strategic management practices in the business" (p. 23). Perhaps it is the entrepreneur owner/manager, not the small business manager, who focuses on the profit and growth that we are capturing in this study.

Another finding of this study is that while the coefficient depicting legal structure was statistically significant and positive, the actual type of legal structure did not make a difference except for the ROCF model. Cooper, Dunkelberg, Woo, and Dennis (1990) found in one study that type of legal structure contributed to failure; however, in a subsequent study (1991) the authors found that the same construct did not contribute to failure. Because the results are so varied, the present study suggests the possibility that the significance of legal structure could be industry specific. For example, professional firms (medical doctors, attorneys, etc.) are more likely to find the partnership structure conducive to success than other types of firms.

The lukewarm support for education as a predictor of success appears to be consistent with previous findings. Of the studies that Lussier (1995) reviewed, five found that college education actually contributed to failure and two found that college education did not contribute to failure. Dyke, Fischer, and Reuber (1992) summarized six studies and stated that half of these studies found a positive relationship between education and firm performance. Additionally, there are numerous anecdotal examples of successful owner/managers who dropped out of college (e.g., Steve Jobs and Apple Computer). Perhaps owner/manager intelligence, rather than education, is a better measure of success.

Study Limitations

It is important to point out certain limitations of this study. One area of note is the proxy for documentation. It is possible that the owner/managers keep records and do business planning but not in a formal manner. Perhaps the critical point strategy noted by Frese, van Gelderen, and Ombach (2000) is truly a form of this informal planning and documentation. Thus, the variable may not adequately portray the actual behavior. Care should be used when interpreting these results; however, the results challenge those interested in small business development to examine their own paradigms.

Further, while the models in this study identified significant predictors of small firm success and explained a moderate amount of performance variance, there are many variables that remain to be tested and variance left to be explained. An example would be personality characteristics, such as adaptability and risk aversion, as suggested by Morris and Zahra (2000).

Finally, there are inherent limitations to using accounting ratios to measure the success of small businesses. Although the authors provide considerable support from the strategy literature as to the appropriateness of these measures, small business owners operate businesses for various reasons other than shear wealth—including greater freedom at work, greater autonomy, or even as a cure for boredom. Or, as previously noted (Carland, Hoy, Boulton, and Carland 1984), the small business owner may operate the business for the purpose of furthering personal goals. In these cases the measure of success may not be financially motivated.

Conclusions

There are several possibilities that might be considered for future research. First, more research must be done in determining the effect of previous experience on performance. While the results, which suggested that less experience was correlated with success, were consistent with the work of Van de Ven, Hudson and Schroeder (1984), these authors admitted to having multicollinearity problems. Previous studies have examined the relationship between the success of the business and the past experience of the owner/manager. In general, individuals with previous management experience were found to be associated with more successful firms, as were the findings of Yusuf (1995). A few researchers have submitted that it may be the actual time spent in the creation of the venture that is the critical activity as opposed to the time actually spent owning a business (Dyke, et al. 1992; Gartner 1988; Ronstadt 1988). However, another explanation of this lack of consistency among studies suggests that there is more to how we define this experience variable. For example, Dyke et al. (1992) suggest that previous experience can be defined as previous experience in small business (owner/manager experience), participation in previous business start-ups, or family experience in small business. With the latter the individual may consider experience the act of observing family members starting and managing companies. While Bates (1990) was unable to find a link between family experience and small business success, Duchesneau and Gartner (1990) found a correlation between business success and entrepreneurial behavior on the part of family members. Future studies might more explicitly define the term "experience" to determine the actual direction of the correlation.

Also, the documentation variable needs more exploration. There exists strong empirical support for the con-

tention that the existence of formal documentation and planning outperforms informal planning in large companies (Ansoff, Aver, Brandenburg, Portner, and Radosvich 1970; Herold 1972; Karger and Malik 1975; Thune and House 1970; Wood and LaForge 1979). However, Robinson and Pearce (1983) did not find the same support for this proposition in small firms, and Lyles, Baird, Orris, and Kuratko (1993) found mixed results. More empirical results are needed.

Finally, the choice of firm performance measures has been the source of debate among researchers. Future work is need to determine the adequate performance measures for the assessment of small business success—are these measures always financials or are their other factors we much consider?

Endnotes

1. Firms where managers act as agents for owners.

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