

Investigating Factors Impacting U.S. Small-Sized Apparel Manufacturers’ Subjective Evaluation of Firm Performance

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Abstract

The purpose of this study was to learn more about U.S. small-sized apparel and sewn products manufacturing firms through an analysis of their firm performance with the multiple aims of improving management practice and advancing the reshoring of U.S. apparel manufacturing. We know relatively little about new companies and small-sized entrepreneurs who operate apparel production businesses, and specifically what impacts their perceptions of firm performance in navigating the complex and rapidly changing apparel industry. We build upon stakeholder theory and the knowledge-based view of the firm. Accordingly, this study involved a quantitative investigation as to what degree the following three attributes explained a subjective evaluation of U.S. apparel producing firm performance; entrepreneurial orientation, new product; and the ability of the firm to acquire knowledge in this competitive industry. Results of hierarchical multiple regression suggest that all three variables predicted significant change in subjective firm performance with an adjusted R^2 of 0.29.

Keywords: apparel manufacturers, firm performance, entrepreneurial orientation, product development, knowledge acquisition

1.0 Introduction

The textiles and apparel industry generates a global value of approximately \$3 trillion and employs about 100 million people, making this industry among the largest in the world. This global industry is considered a critical creator of jobs, a path to industrialization and a facilitator of value chain relationships that modernize economies (Fibre2Fashion, 2019; Manchanda, Schlorke, & Schmitt, 2020). However, the U.S. imports approximately \$1 trillion more in manufactured goods per year than it exports creating a deficit of roughly 4.5% of our gross domestic product (Klein, 2020). Recently the impact of COVID-19 has globally resulted in a \$300 billion loss in textiles and apparel with revenues down 19% (Duthoit, 2020; Martin, 2021). Due to the continued investment in the domestic industry, the US textile industry does hold potential for attaining global competitiveness. Capital investments have generated new fiber, yarn, and recycling facilities that convert waste into textile uses, and an impressive number of companies have built new U.S. facilities for manufacturing (Stephen, 2019). Foreign manufacturers are now turning to the U.S. for production with an increase of 150% in the last ten years (National Council of Textile Organizations, 2021).

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The purpose of our exploratory study is to learn more about current U.S. small-sized apparel manufacturing firms through an analysis of their firm performance with the aim to improve management practice and advancing the reshoring US apparel manufacturing. While forces of change have resulted in reconfiguration of U.S. apparel manufacturers, we know relatively little about new companies and small-sized entrepreneurs who operate apparel design, development, and production businesses, and specifically what impacts their perceptions of firm performance in navigating the complex and rapidly changing apparel industry (Camarena-Gil et al., 2020). We incorporate concepts from Entrepreneurship Orientation such as risk-taking, proactiveness, and innovation along with the firms' assessment of new product development. Stakeholder theory is also applied which considers the firm as part of a larger network rather than as an independent, autonomous entity. Crucial to development of strategy are the interconnections between stakeholders, thus new product development is examined for the industry relationships contributing to product development. Incorporated from the Knowledge-Based View (KBV), we examine the firm's capacity to acquire knowledge. Knowledge acquisition has been examined and found necessary for moving the new information into development of enhanced products or services ultimately impacting firm performance (Limaj & Bernroider, 2017). Findings will provide further insights to the U.S. apparel manufacturing sector in support of retaining viability and competitive advantage in an industry sector that relies on constant modifications.

2.0 Literature Review and Hypotheses

In most small businesses one factor alone rarely accounts for any given impact on firm performance outcomes. For apparel manufacturers, as an important piece of the fashion supply chain, we focus on three proposed overlapping attributes of the business relative to production of goods that meet consumers' changing demands. Thus, we consider the necessity to advance new product development is likely related to the firm's ability to acquire knowledge regarding the sources and trends in fiber, fabrics, and design. The owner's level of entrepreneurial orientation, involving innovativeness, risk taking and proactiveness, is predicted to motivate acquisition of knowledge contributing to new product development. Accordingly, this study investigates to what degree all three attributes explain a subjective evaluation of firm performance. Each of these attributes have long been the focus of study, and many relationships have been previously revealed. Covin and Wales (2019) suggest that to advance EO knowledge, models should consider examination of potentially overlapping constructs. Our study offers further understanding as we investigate the extent to which there are individual as well as overlapping contributions attributes make in explaining firm performance. We focus our exploration at the firm/business level which is an approach whereby the small business owner is considered as a firm. Following Lumpkin and Dess's (1996) view we consider that the small business is an extension of the owner's leadership.

2.1 Firm Performance

A number of theories and propositions can be found in the academic literature attempting to enhance current understanding regarding evaluation of firm performance. While space limitations do not permit an in-depth discussion, it is important to recognize that institutional theory, organizational management, strategic planning, and organizational learning have all been applied to help in understanding firm performance. We approach this study from stakeholder theory (Freeman, 1984). Freeman describes a stakeholder as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (1984, p. 46). Performance measured under this conceptualization offers the perspective of firm performance in a comprehensive way (Santos & Brito, 2012) including the firm owners' evaluation of success, customer satisfaction, goal achievement, and comparisons of their firms to their direct competitors in profits, sales growth, and cost controls.

There are multiple perspectives regarding the concepts and the methods of measuring performance though researchers have not reached consensus as to a singular approach (Vij & Bedi, 2016). Business performance can be evaluated by objective/traditional, financial measures and by subjective (personal orientation) methods (Lekovic & Maric, 2015). Performance measured by financial indicators, such as the profit per employee or return on investment, are easily measurable in medium to large sized firms, but these indicators do not address criteria such as personal goals, perceptions of customer satisfaction, or performance relative to direct competitors. Furthermore, garnering responses from small business owners, who are thinly stretched across multiple responsibilities, is difficult and requesting their time and access to firm financial information is also difficult to attain. Several scholars suggest that often small businesses cannot or are not willing to provide objective information (Achtenhagen et al., 2010; Vij & Bedi, 2016; Wang & Ang, 2004).

Prior research results suggest that a subjective perspective is first measured so that the owners/entrepreneurs provide the initial viewpoint (Stenberg, 2004; Simpson et al., 2004; Vij & Bedi, 2016). When evaluating small firm performance, it is the subjective measure that permits the capture of goals, lifestyles, and comparisons to others operating in similar business environments (Lekovic & Maric, 2015).

2.2 Entrepreneurial Orientation

Entrepreneurial orientation (EO) was defined by Covin and Wales (2019) as, “an attribute of organization that exists to the degree to which that organization supports and exhibits a sustained pattern of entrepreneurial behavior reflecting incidents of proactive new entry” (p. 5). EO research has held many definitions with interest in identifying the number of dimensions involved. For this study we follow Le Breton-Miller and Miller’s (2011) unidimensional approach to EO consisting of dimensions concerning innovativeness, risk taking and proactiveness. We follow the definitions in EO research by Zbierowski (2020) whereas innovativeness involves the firm’s willingness to support originality and the integration of change to achieve a competitive advantage. Risk taking involves the extent to which the firm assumes business-related risks, and the concept of proactiveness entails responding to impending or approaching demand to amend or shape the environment. There are mixed findings as to how the dimensions of EO impact small business performance (Lechner & Gudmundsson, 2014). Analysis of past research found EO to advance financial outcomes (objective measure) rather than advancing managerial goals (subjective measure) (Rauch et al., 2009). Research relative to the apparel industry found that entrepreneurial orientation had a positive impact on subjective measures of performance in small firms and a negative impact in larger firms (Ha-Brookshire, 2009). Our study further explores the relationship of EO with subjective measures of small firm performance. From the entrepreneurship orientation view of firm performance, we hypothesize:

H1: *As the firm owners’ entrepreneurial orientation increases, so will their firm’s subjective performance.*

2.3 New Product Development

We examine the relationship of new product development and evaluation on firm performance from the perspective that a central factor in new product development addresses the firm’s efforts to utilize sources of needed information (Poolton & Barclay, 1998). Koen, Bertels, and Kleinschmidt (2013) considered, for incremental new product development, a proficiency in garnering current market knowledge at the front end of new product development would enhance firm performance. Stakeholder theory and the knowledge-based view of the firm (KBV) perspective would suggest that efforts to secure information are multi-varied in terms of internal and external sources. Innovation has long been the focus of new product development (Damanpour, 1991; De Sordi et al., 2020); however, as innovativeness was assessed in this study as an important component of entrepreneurial orientation, we sought to understand what types and levels of external sources were considered important in preparing or planning for new product development. We considered the level of complexity of new apparel products to be continuous and incremental (Tidd, 2001) in terms of production but closer to the end users; thus, requiring manufacturers to obtain clear specifications communicated by their customers along their supply chains. We focus on the ideation stage of Cooper’s (2013) idea-to-launch in new product development. This stage involves preliminary work focused on uncovering opportunities through multiple sources and methods of investigation. Included are research and assessment of user needs and wants, sources of supplies, and the potential for competition as well as collaboration, all in an effort directed toward new product design and development. These preliminary considerations are necessary for moving forward to testing, full-scale production, and marketing (Cooper, 2011).

H2: *As the firm owners’ inclusion of external market knowledge and connections in new product development increases, so will their firm’s subjective performance.*

2.4 Knowledge Acquisition

Grant (1996) considered knowledge acquisition and storage to be an essential requirement of production and explain firm performance. He asserted, “Fundamental to the knowledge-based view of the firm is the assumption that the critical input in production and primary source of value is knowledge (1996, p. 113). From the knowledge-based view of the firm (KBV), knowledge is considered one of the most strategically important resource produced through interpersonal relationships (Haq & Davies, 2020; Kogut & Zander, 1992).

Cohen and Levinthal (1990) argued that outside sources of knowledge were vital to the process of developing new products and processes. It is considered that knowledge is typically difficult to mimic due to firm-centered capabilities and complexities that are geared for achieving competitive advantages. The continual procurement of new knowledge and skills requiring renewal and has been identified as knowledge acquisition (Yli-Renko et al., 2001). In this study we examine knowledge acquisition from an external or inter-organizational perspective and define knowledge acquisition as the firm's intense interactive processes to procure new information, technology and competence (Zahar & George, 2002). Haq and Davies (2020), in examining retail business involved in fabrics, apparel and accessories, found acquiring knowledge to strongly contribute to firm survival and success. We maintain that the evaluation of firm performance is partially dependent on the firm's capacity to acquire external knowledge. To summarize:

H3. *As the firm owners' knowledge acquisition increases, so will their firm's subjective performance.*

2.5 Control Variables

We attempt to control for contingency conditions by examining one U.S. industry anticipating that the complexity facing these firms are likely to be similar. This approach provides a greater depth of analysis than a cross-sectional dataset. Apparel and sewn products manufacturing are examined across two populations, within a single state and nationally. Upon examination of descriptive characteristics of the two samples, we considered location as a likely variable to control in the analysis. To further clarify the hypothesized relationships, additional factors were considered for potential control in the analysis. Numerous studies have found factors relating to business characteristics and owner-manager characteristics can all be important in understanding small firm performance (Blackburn, et al., 2013). As the U.S. Small Business Administration's Office of Advocacy (2020, 2021) indicates, there remain gender-based discrepancies with women represented businesses equating to 19.7% of all U.S. business. Factors concerning owner age, gender and prior knowledge of business have all been found to influence small firm performance (Littunen & Virtanen, 2006; Oe & Mitsuhashi, 2013). It was therefore important to acknowledge and control for these descriptive factors in our exploration of firm owners' evaluation of apparel manufacturing firm performance.

3.0 Methods

4.0 3.1 Data Collection

The global textile and apparel industry involves processes and production of a wide array of products resulting from fiber, fabrication, and manufacture. In this present study we narrowed the focus for our exploration to owners of apparel/sewn products manufacturing firms in the U.S. with less than 250 employees. Our goal was to achieve a representative national sample of manufacturing firms with a focus on smaller-sized U.S. entrepreneurial firms facing growing international competition.

Data was collected from a sample of apparel/sewn products manufacturers from both a single US state and at the national level. The questionnaire was developed for Qualtrics online distribution and pretested with owners of apparel manufacturing firms who exemplified this area of US manufacturing. A list of potential national participants was generated from the North American Industrial Classification System (NAICS). Selected were businesses who had filed as involved in production in major area 21: Apparel and other finished products made from fabrics and similar materials, under the older Standard Industrial Classification system, and major area 3158: Cut and Sew Apparel Manufacturing (U.S. Bureau of Labor Statistics, 2020). The single state sample was generated from small-sized business participants who attended the annual apparel and sewn products manufacturing summit for advancing industry connections held in the state from 2014 through 2018. The business size of the state and national businesses involved firms with fewer than 250 employees. After removal of the non-functioning e-mail address, 2,350 national firms and 170 state firms were contacted by e-mail for completion of the online survey. The data was collected from June 2019 to November 2019. Three attempts were made to secure responses following methods suggested by Dillman, Smyth, and Christian (2009).

There were 125 total responses with a national sample total of 77 responses generating 45 completed responses, and a total of 48 western state responses generating 37 completed responses. Though several steps were taken to maximize the response rate, one recognized limitation resulted from the number of participating firms at the national level (3.28%) and the state level (28.23%), for a combined total response rate of 4.96 percent.

This study relied on self-reported data from firm owners as single informants representing their firm. These single key informants were considered the most knowledgeable individuals within the firm. We followed MacKenzie and Podsakoff (2012) that when respondents can and are willing to provide accurate responses, their responses will be less susceptible to common method bias. Common method bias was assessed by conducting a Harman's single-factor test as a diagnostic technique (Podsakoff et al., 2003). This analysis included the loading of all variables into an exploratory factor analysis. We found entry of 24 survey items representing the four scales in a principal components factor with the solution set to one factor and with oblique rotation that this single factor accounted for 25.59% of cumulative variance in the items, which is less than the 50% level suggesting a very low risk for the presence of method bias. To examine a potential non-response bias, independent *t*-tests were performed between the early and late respondents on variables in the proposed conceptual model including absorptive capacity, knowledge acquisition, social interaction, network ties, and new product development. No significant differences ($p > .494$) were identified between the early and late respondents to our online survey (Armstrong & Overton, 1977).

3.2 Characteristics of the Sample

A total of 125 valid responses were returned from the state and national sampling of which 70 held complete responses for inclusion in this analysis. The participants considered themselves to be entrepreneurial (91.8%) and had frequently founded their business (46.8%). Business startups, as the largest path to ownership in this sample, is supported by national data (SBA Office of Advocacy, 2021a). Approximately half of the participants were males (52%) and half were females (48%) which is a larger representation of women (SBA, Office of Advocacy 2021b) but may be reflective of the apparel manufacturing industry. The age of owners ranged from 28 to 83 years of age with a mean of 53 years. In terms of the highest level of education obtained, 47.7% held bachelor's degrees or higher, and 72.5% had prior knowledge of the production business before involvement in their current business.

From the owners' responses, the businesses were considered existing entities with the majority in the growth or mature stage. The range in years of business was broad given the oldest business was 127 years and the youngest one year, but the greatest proportion were in operation 6 to 36 years (60.6%). The majority of the firms were located in urban communities across the US (76.7%) and were considered small in size with an average of four fulltime and two part time employees. These numbers are reasonably consistent with the U.S. Small Business Administration's reporting that 90% of small businesses employed fewer than 20 workers (Small Business Administration, 2020).

Descriptive variables involving the firm owners' age, gender, and prior knowledge were assessed as there were significant differences between the respondents located in the state versus nationally. Among the state participants there were more female respondents (31.7%) than among the national firms (20.3%). The mean age of the state respondents was 49 years of age versus the national sample with a mean of 56 years of age. The state respondents self-rated their prior knowledge level as „more than average“ to a „great deal of expertise“ with a mean of 4.92; whereas the national sample held a mean of 2.93 indicating „very little“ to an „average amount of expertise“. No significant differences were found regarding the firms' location regarding level of innovation ($p = .950$), entrepreneurship pursued by the firm ($p = .335$), overall business success ($p = .339$), achievement of business goals ($p = .868$), number of employees (full time $p = .171$, part time $p = .191$, and net profit evaluations ($p = .114$).

4.1 Measures of Variables

Four scales were produced for the study and for each scale a mean score was created by summing the mean score for each 7-point Likert-type item included (see Table 1 for means, standard deviations, and correlations). Evaluation of subjective firm performance was measured using questions from prior work evaluating multiple subjective measures of performance by Vij and Bedi (2016), Lekovic and Maric (2015), and Zulkiffli and Perera (2011). Firm owners were to indicate their responses to six statements involving perceptions of business net profits, success, and achievement of goals, and relative to competition their rate of sales growth, cost control and customer satisfaction. The scale labeled PERFSCA held a Cronbach's alpha of 0.80. The scale for EO was adapted from work by Le Breton-Miller and Miller (2011), Covin and Slevin (1991), and Stam and Elfring (2008) involving innovativeness, risk taking and proactiveness. Six items were used with three assessing degree of agreement, and three assessing level of importance. The Cronbach's alpha was 0.77 and labeled ENTORIENSCA.

New product development was measured using seven items with five items measuring level of importance for a variety of external sources and two items assessing degree of agreement with statements regarding the borrowing of ideas rather than inventing internally and the adoption of a collaborative strategy. Items were generated from the work by Cohen and Levinthal (1990) and Teece (1992). The Cronbach's alpha for this scale was 0.73 and labeled NPDSCA. The knowledge acquisition scale was developed and modified from research by Yli-Renko et al. (2001) and consisted of five items with a Cronbach's alpha of 0.82 and labeled KASCA. The items asked respondents to indicate the degree to which they agreed with each of statement regarding the external acquisition of knowledge involving garnering market knowledge from industry, customer needs and trends from suppliers, product technical know-how and supply processes from business relationships, and acquiring technical training for firm personnel. Acceptable levels of reliability and consistency were found across the four scales with the Cronbach's alpha values between 0.73 and 0.82 (Nunnally & Bernstein, 1994).

5.0 Results

Correlation and multiple regression analyses were conducted to examine the relationship between firm performance and various potential predictors. Table 1 summarizes the descriptive statistics and correlation results. Examination of the variables found evidence of strong correlations between PERFSCA and the scale involving ENTORIENSCA, and no significant correlation with NPDSCA and KASCA. There were no significant correlations with PERFSCA and the variables measuring location, prior knowledge, gender, and age; however, between the independent variables there was evidence of moderate correlations between NPDSCA with both location and the owner's prior knowledge, and there were also moderate correlations between KASCA with both location and prior knowledge. ENTORIENSCA was strongly associated with both NPDSCA and KASCA, and there was a strong correlation between NPDSCA and KASCA. These significant correlations among entrepreneurial orientation, new product development, and knowledge acquisition were expected and determined the analysis in testing three hypotheses.

Hierarchical Multiple Regression was used to predict the changes in firm performance (PERFSCA), as the dependent variable, in response to changes in the independent variables involving the firm owners' level of entrepreneurial orientation (ENTORIENSCA), new product development (NPDSCAL), or knowledge acquisition (KASCA). Known predictor variables, as a general rule, are entered into the model first followed by new predictors. In the first block of the hierarchical analysis known descriptive variables were entered in the model to control for owner location, prior knowledge, gender, and age (see Table 2). In this manner, these variables in the first block remain in the equation for assessing the second block; thus, the usefulness of independent variables in the second block are assessed in the presence of the first-block independent variables in the equation (Pedhazur, 1982). For the second block, a stepwise entry was used to explore the predictor variables of entrepreneurship orientation, new product development, and knowledge acquisition. There was no order determined as no previous research was identified regarding the effects of this combination of variables, nor for examining their contribution to U.S. apparel manufacturers' performance (Field, 2013). This method of entry was therefore performed to allow the examination of the contributions beyond the first group of independent variables in examining semi-partial correlations. These regression models were fit to the data to examine the associations pertaining to Hypotheses 1, 2, and 3.

Before examining relationships, collinearity diagnostics were performed to examine the variance inflation factors (VIF) in the model with all independent variables. All variance inflation factors were less than 2.0 involving the variables examined regarding the three hypotheses suggesting limited multicollinearity concerns (Aiken & West, 1991). Two control demographic variables did hold VIF factors above 2.0, firm location (2.27) and prior knowledge (2.04). The Durbin-Watson test statistic examined the potential correlations between errors. Test statistic values in the range of 1.5 to 2.5 are considered, as a rule of thumb, relatively normal (Glen, 2016). The Durbin-Watson value was 2.226 in this study.

Model 1 included the control descriptive variables of location, prior knowledge, gender and age. These were entered in the first block of the hierarchical regression. In the second block ENTORIENSCA, NPDSCA, and KASCA were all entered in a stepwise regression for testing Hypotheses 1, 2, and 3 (Models 2, 3, and 4). All three variables significantly contributed to explaining firm owner's perceptions of their firms' performance with an adjusted R^2 of 0.291. Each of the variables contributed to a significant change in the R^2 as can be seen in Table 2.

Results in Model 4 establish that entrepreneurial orientation and knowledge acquisition variables, indicating firm owners with higher scores on these scales were expected to hold higher firm performance. Hypothesis 1 was supported as entrepreneurial orientation was positively related to firm performance. Hypothesis 2 was not fully supported as the relationship between new product development and firm performance was significant though inversely related. The new product development scale had a significant negative weight, indicating the greater the new product development scores the lower firm performance. Hypotheses 3 was supported as knowledge acquisition was significantly related to firm performance with the control variables and both entrepreneurship orientation and new product development in the equation.

Table 2 displays the unstandardized (B) and standardized regression coefficients (β), the standard error of the estimate (SE), and the adjusted R^2 and R^2 change after the entry of each control variable, and the entry of each of the three independent variables. The R was significantly different from zero after each variable entered the equation and with all four control variables plus three hypothesized variables in the equation ($R = .548$, $F(3, 63) = 4.501$, $p < .001$).

6.0 Discussion

5.1 Implications

The purpose of this study was to examine well-researched concepts of entrepreneurship orientation, new product development, and knowledge acquisition to assess their relationships with each other and with firm performance in the context of small U.S. apparel manufacturing firms. Findings offer theoretical support for the knowledge-based view of the firm perspective in that firm owners considered knowledge acquisition and external know-how for new product development to be significantly related to evaluation of firm performance. Scales used to examine knowledge acquisition and new product development held mean scores of 4.346 and 4.248 respectively on a 7-point Likert-type scale suggesting agreement or importance in external sources and external relationships. However, in Model 4, when keeping location, prior knowledge, gender and age constant, while examining the effects of entrepreneurial orientation on firm performance, new product development held a significant but negative relationship with firm performance in step 2 (Hypothesis 2). The negative sign of the relationship between new product development and performance was initially surprising since it indicated that after controlling for demographic variables, a stronger firm performance was related to less or lower levels of new product development in the firm. However, a review of the new product development assessment instrument used made known the emphasis on industry relationships in new product development rather than number of new products introduced. The measure focused on associations or connections in processing and advancing new products with strong mean scores for external collaborative relationships with equipment and material suppliers, and customers. It may be that firm owners hold a threshold for developing and maintaining external relationships and at some level the sharing of information is limited or diminishes among firms operating in this intensely competitive industry. This explanation warrants further examination particularly in terms of subjective measures of firm performance.

With new product development added to the equation, knowledge acquisition, in step 3, was significant and positive in relation to firm performance (Hypothesis 3). Given that entrepreneurial orientation entered the stepwise regression analysis in step 1 with a higher full correlation and that innovation was assessed as one aspect of entrepreneurial orientation, a possible explanation is that the portion of new product development remaining unexplained involved firm owners' internal control of new product development ideas and paths rather than implementing external connections to industry. The practice of knowledge seeking and acquisition for new product development warrants further research for greater understanding.

Findings support the importance of entrepreneurial orientation among firm owners for accomplishing a strong firm performance. Also supported is the value of knowledge acquisition by building collaborations along the supply chain that align with the firm's entrepreneurial orientation and approach to new product development. Additional studies could address what information is shared or adopted within networks.

5.3 Future Studies and Limitations

This study is not without limitations. The data collection methods may not have provided access to data that could have contributed to a broader understanding, and is not generalizable to other industries, cultures, or social economic venues.

A subjective and objective research design using qualitative research methods or mixed methods are suggestions for future studies of concepts and relationships explored in the present study. Additional study is required with participants from other countries, markets, and industries. Our measurements suffer from deficiencies and the generalizability of any findings based on a small sampling scheme and should be examined further. Future studies could also improve the quality and reliability of findings through replication in multiple apparel manufacturing organizations within or beyond the U.S., or with entrepreneurs involved in product development from other industries. Despite deficiencies, this study represents an attempt to re-examine three concepts considered important to firm performance for their collective and individual contributions. The work offers an exploration of one U.S. industry sector that has seen a steady decline in number of firms and volume of business over that past 30-plus years. Findings offer insights for rebuilding or reshoring this industry with particular focus on small-sized entrepreneurial U.S. firms.

7.0 References

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Variable	M	SD	1	2	3	4
Location	1.540	0.502	-0.310	0.202 *	0.117 *	0.128
PriKnow	3.890	1.629	0.193	0.238 *	0.225 *	0.188
Gender	1.500	0.502	0.136	-0.020	-0.071	-0.078
Age	52.930	12.500	-0.029	-0.081	0.052	0.088
1. ENTORIENSCA	5.078	0.969	1.000	0.415 **	0.400 **	0.351 **
2. NPDSCA	4.280	0.906		1.000	0.623 **	-0.130
3. KASCA	4.346	0.971			1.000	0.171
4. PERFSCA	4.740	1.032				1.000

N=70

Significance Level: * $p < 0.05$; ** $p < 0.01$ (two Tailed).

Table 1: Means, Standard Deviations, and Correlations for Control and Independent Variables

Hierarchical Regression	Variable	Model 1			Model 2			Model 3			Model 4		
		B	SE	β	B	SE	β	B	SE	β	B	SE	β
Block 1	Constant	1.778	1.132		0.297	1.219		1.338	1.214		1.228	1.185	
Enter	Location	0.974	0.351	0.473 **	0.887	0.431	0.337 *	0.791	0.322	0.385 *	0.777	0.314	0.378 *
	PriKnow	0.316	0.101	0.498 **	0.263	0.416	0.099 *	0.278	0.094	0.438 **	0.263	-0.92	0.415 **
	Gender	0.155	0.259	0.075	0.219	0.249	0.107	0.212	0.237	0.103	0.215	0.231	0.105
	Age	6.693	0.001	0.01	0.002	0.01	0.024	0.001	0.009	0.015	-0.001	0.009	-0.012
Block 2	ENTORIENSCA				0.319	0.299	0.121 **	0.459	0.125	0.431 **	0.412	0.124	0.387 **
Stepwise	NPDSCA							-0.378	0.133	-0.332 **	-0.522	0.155	-0.484 **
	KASCA										0.294	0.142	0.277 **
	Adj. R^2	0.096			0.172			0.254			0.291		
	ΔR^2	0.148			0.084			0.087			0.044		

Note: N= 70. We entered the control variables of Location (1= National, 2= State), Prior Knowledge (5 pt. scale), Gender (1= Male, 2=Female), Age of owner(in years) in Model 1. Results of the stepwise regression predict the firms' Performance considering Model 2 Entrepreneurship Orientation, Model 3 New Product Development, and Model 4 Knowledge Acquisition.
 * $p < .05$, ** $p < .01$
 Durbin-Watson = 2.226

Table 2: Hierarchical regression models fit to determine the relationship between PERSCA and ENTORIENSCA, NPDSCA, and KASCA accounting for location, prior knowledge, gender and age.