

Organization Strategy for Successful Firm Performance

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This paper investigates small firm performance in relation to efficiency and flexibility strategies identified in organizational theory. Using a database of nearly 6,000 privately held, independent small businesses, the authors find support for the general hypothesis that each strategy has a unique financial profile as a result of implementing systems, procedures, policies and organization design consistent with each strategy. While not all hypotheses were supported in the data, this study makes a significant and unique contribution to the field of small firm strategy and suggests improved research methods for this stream.

INTRODUCTION

Advancing knowledge on strategy in small firms is an essential task because these firms play a vital role in world economies (Sherman, 1999), yet face significant disadvantages in the marketplace in terms of managerial expertise, access to capital, bargaining power with suppliers and buyers, and experience curve effects (Forbes and Milliken, 1999; Pissarides, 1999; Dean et. al., 1998; Rajan and Zingales, 1995; Holmes et.al., 1994). Conclusions have generally been made that strategy does indeed impact firm performance and that strategy functions differently in small firms than in large ones (Fiegenbaum and Karnani, 1991; Jarillo, 1989).

One aspect of small firm strategy that has not received much attention is how product offering relates to operational strategy and firm performance. This paper examines this concept with regard to three choices firms can make: to offer only standard products, to offer only made-to-order products, or to offer both standard and made-to-order products. Previous literature has proposed that these choices dictate operational strategy (Chrisman, et. al., 1998; Randolph and Dess, 1984), as firms that offer only standard products must compete on organizational efficiency, firms that offer only made-to-order products must compete on their flexibility to meet individual customer needs, and firms that offer both must attempt to be both efficient and

flexible (Filley and Aldag, 1980). It has also proposed that the technology, labor, control system, and organizational structure requirements to achieve efficiency conflict with those required to achieve flexibility, and it is therefore difficult for firms to achieve both efficiency and flexibility (Fiegenbaum and Karnani, 1991; Filley and Aldag, 1980).

While these strategies and their implications have been discussed in the organizational theory and operations management literature, little has been done empirically to investigate how these concepts apply to the management of small firms. This study advances the literature by building on the theoretical work of many others. The implications for small firm management and future research are discussed.

LITERATURE REVIEW

Early literature on organizations proposed that there is a tradeoff firms can make between efficiency and flexibility due to competing organizational and operational requirements in terms of technology, organizational structure, operating processes, and labor. Stigler (1939) introduced this tradeoff, arguing that the technology needed to operate with low costs is entirely different from that required to meet changing demand. Thompson and Bates (1957) followed this, proposing that firms with flexibility goals do not invest in heavy, specialized capital equipment because it inhibits the ability to shift from one goal to the next, and that flexibility goals also require skilled direct labor: “front-line flexibility requires the exercise of judgment, and hence experience is a major basis for functional and hierarchical differentiation” (331). Woodward (1965) classified manufacturing production technologies as unit/small batch and large batch/mass production, finding that large batch/mass production firms focused on efficiencies, while unit/small batch firms were flexible in meeting customer needs.

Filley and Aldag (1980) built on this previous work along with their own observations to assert that a clear distinction exists: “the survival of organizations seems to depend, on the one hand, upon creating efficiency of operations, *or on the other hand*, producing an outcome which is relatively made-to-order” (305). These researchers concluded that firms operating with an efficiency strategy produce different types of products and utilize different technologies, organizational structures, control systems, and employees than those that operate with a “made-to-order” strategy.

More recently, Fiegenbaum and Karnani (1991) examined these concepts in terms of flexibility in output volume, finding an interaction effect between variation in output volume and firm size on performance. This paper integrates Filley and Aldag’s (1980) and Fiegenbaum and Karnani’s (1991) work to propose that the key to efficiency and flexibility strategies does not only come from the ability to meet variation in quantity of product provided, but also from the variation in types of products that are offered. In this regard, flexibility refers to a firm’s ability to provide made-to-order products that are unique to individual customers or groups of customers.

These efficiency and flexibility classifications of small firms are different than some of the more popular typologies that have been established in the literature. For instance, it is different than Porter’s (1980) low cost and differentiation, in which firms execute a differentiation strategy via marketing or innovation rather than customization. Products that are differentiated still may be standardized and conducive to mass production and distribution (White, 1986), which are in essence efficiency strategies. Differentiation via marketing might also be less relevant to small firms, as they may not have the marketing dollars necessary to pursue this

strategy. This is not meant to imply that other typologies are not useful in small firm strategy research, but the efficiency and flexibility classifications may provide an alternative perspective that reveals new insights into small firm behavior and performance.

THEORY DEVELOPMENT

In small firms, where selection of strategy is critical for survival given the disadvantages they face, an investigation of these operational strategies seems especially relevant. Configuration theorists have long held that operational strategy is central to organizational outcomes (Chandler, 1962) and that congruence among strategy, technology, organizational structure, and operating processes are key in the overall effectiveness of a firm (Fry and Smith, 1987; White, 1986). Different strategies are expected to require different structures (Miller et. al., 1988; Filley and Aldag, 1980), which must “respond to the particular control and coordinative problems created by the strategies that are ultimately selected” (Miller et. al., 1988, p. 545). Empirical studies regarding configuration have consistently found evidence that fit among organizational characteristics is an important predictor of firm performance (Slater and Olson, 2000; Ketchen et. al., 1997; Priem, 1994; White, 1986).

Because each operational strategy calls for a particular configuration of organizational aspects (Table 1), efficiency and flexibility can be viewed as “pure” or “ideal” configurations, while a combination of efficiency and flexibility would require a “hybrid” configuration (Doty et. al., 1993; Shane, 1998). Since the configurational dimensions for efficiency and flexibility conflict, firms that operate with this hybrid configuration will not have consistent organizational attributes and will experience difficulty achieving either efficiency or flexibility in their operations. This results in an inability to effectively maintain low costs or effectively meet end customer needs, and therefore an inability to establish a competitive advantage.

Following this logic, Tushman and O’Reilly (1999) suggested that a firm can only provide both standard and made-to-order outputs effectively if they are pursued in physically separate entities, with different organization structures, systems, rewards, and competencies; in other words, two divisions with pure configurations. While this may be feasible for large firms, small firms generally have more limited resources (Cooper et. al., 1994) and expertise (Forbes and Milliken, 1999). Because of this, the task of separating the organization into divisions that effectively follow different strategies may be more demanding and complex than most small firms can handle. Therefore, small firms that attempt to mix efficiency and flexibility strategies will likely be at a disadvantage to other firms, which should result in lower performance.

RESEARCH MODEL

It was argued that organizations which organize consistently, following either flexibility or efficiency strategies, perform better than the majority of firms that adopt a mixture of the strategies. Further, it has been found that the strategies of flexibility and efficiency are reflected in sales volume and gross margins (Eismann, 1997; Filley and Pricer, 1996). Therefore, identifying consistent Flexibility and Efficiency firms may be able to explain and predict key standard ratios provided in the Kauffman Center Financial Database for each organization strategy: Quick Ratio, Current Ratio, Current Liabilities to Inventory, Collection Period, Asset to Sales Ratio, Return on Sales, and Return on Invested Capital.

An efficiency operating strategy would include the efficient use of working assets and this would reduce liquidity ratios. By keeping unneeded current assets to a minimum, a company is able to achieve much more efficient use of working capital than those with excess current assets are. Therefore,

H1: Consistent use of a Flexibility strategy will be reflected in a higher Quick Ratio than firms consistently using an Efficiency strategy.

Similarly, with the Current Ratio, Efficiency firms would utilize strategies of asset efficiency. This would minimize current assets to help achieve total asset efficiency. Therefore,

H2: Consistent use of a Flexibility strategy will be reflected in a higher Current Ratio than firms consistently using an Efficiency strategy.

With Flexibility firms, inventory is held longer and at a high level and this, coupled with the use of supplier financing to finance inventory to the extent possible, should lead to this predicted outcome. Therefore,

H3: Consistent use of a Flexibility strategy will be reflected in a higher Liabilities to Inventory Ratio than for firms consistently using an Efficiency strategy.

Flexibility firms will have longer collection periods and they will not invoice and collect efficiently. In addition, receivables will take longer to collect because customers will wait to pay until they are satisfied with the product or service when purchasing from Flexibility firms. On the other hand, Efficiency firms will have highly developed invoicing and collections systems that are designed to minimize the collection-time and this would lead to efficient asset use. Therefore,

H4: Consistent a Flexibility strategy will be reflected in a longer Collection Period than for firms consistently using an Efficiency strategy.

This theory of organization suggests that Flexibility firms will have more assets as a percentage of sales than Efficiency firms will. Because Efficiency firms are using volume and asset efficiency strategies, the assets of the company will generate high sales volume. Flexibility firms, on the other hand, will use their assets in a more flexible but more inefficient manner and this will result in assets being a higher percent of total sales. Therefore,

H5: Consistent use of a Flexibility strategy will be reflected in a higher Asset to Sales Ratio than for firms consistently using an Efficiency strategy.

In regard to return on sales, I believe that Flexibility firms will have much higher net profit margins than Efficiency firms will because they pursue high margin strategies. On the other hand, Efficiency firms achieve their return through volume strategies and this will lower return on sales. Therefore,

H6: Consistent use of a Flexibility strategy will be reflected in a higher Return on Sales Ratio than for firms consistently using an Efficiency strategy.

If a firm is using a consistent Flexibility strategy, and if the other hypotheses hold true, then this firm should experience a higher Return on Invested Capital. These firms would be operating with higher net margins and lower capital base (less capital required to sustain lower levels of growth). Therefore,

H7: Consistent use a Flexibility strategy will be reflected in a higher ROIC than for firms consistently using an Efficiency strategy.

As Efficiency and Flexibility organizing strategies are incompatible with each other, the return on invested capital of a firm using consistent Flexibility organizing strategies should be significantly higher than those using a mixed strategy. A combination of debt and equity provides a good approximation of the capital investment in both working and fixed assets of a firm and the measurement of return on invested assets provides a good basis for measuring the success of firm financial performance. Therefore,

H8a: Consistent use of Flexibility strategy will be reflected in a higher Return on Invested Capital Ratio than for firms using a Mix Strategy.

And,

H8b: Consistent use of an Efficiency strategy will be reflected in a higher Return on Invested Capital Ratio than for firms using a Mix strategy.

DATA

A convenience sample of 6,303 manufacturing firms with less than \$20 million in sales was provided in the Kaufman Center Financial Statement Database, which is consistent with other researchers' definition of small firms (Filley and Pricer, 1996; Daily and Dalton, 1993; d'Ambroise and Muldowney, 1988). Flexibility firms were defined as those firms in the upper quartile of Gross Margin and the lower quartile of Net Sales. Efficiency firms selected were those in the upper quartile of Net Sales and the lower quartile of Gross Margin, consistent with the operational theory described earlier.

When looking at the performance implications of the operating strategies presented in Table 1, firms that follow a consistent strategy of Efficiency should have high sales volume and asset turnover. Flexibility firms, when following a consistent strategy, should have relatively low sales volume and higher than average net margins.

TABLE 1
CHARACTERISTICS OF EFFICIENCY AND FLEXIBILITY FIRMS

Operational Aspect	Efficiency Firms	Flexibility Firms	Cite
Technology	Specialized equipment, heavy fixed assets	General purpose equipment	Lowson (2001), Thompson (1967), Thompson and Bates (1957)
Production Processes	Long product runs	Unit or small batch production	Zipkin (2001), Filley and Aldag (1980), Woodward (1965)
Organization Design	Mechanistic	Organic	Filley and Aldag (1980), Thompson and Bates (1957)
Direct Labor	Unskilled	Skilled Decision Makers	Lowson (2001), Filley and Aldag (1980), Thompson and Bates (1957)
Control Systems	Feed forward	Feedback	Morgan (1992), Filley and Aldag (1980), Thompson (1967)

Using financial ratios to assess other financial ratios raises the issue of whether the independent variables (Net Sales and Gross Margin) are truly independent. Table 2 includes the descriptive statistics and correlation matrix of independent and dependent variables.

TABLE 2
DESCRIPTIVE STATISTICS

Variable	Mean	s.d.	1	2	3	4	5	6	7
1. gmargin	.32	.14							
2. netsales	4,959,868	4,356,861	-.267**						
3. asstosal	.46	.24	.069**	.025*					
4. qr	.71	1.30	.181**	-.153**					
5. cr	3.30	3.52	.170**	-.136**	.819**				
6. ltoinv	4.77	7.18	.081**	-.094**	-.060**	-.165**			
7. collper	43.28	22.68	.000**	.339**	-.134**	-.024	.069**		
8.ros	.03	.05	.281**	.002	.215**	.220**	.004	-.002	
9. roic	.13	.21	.190**	-.001	.055**	.030*	.042**	-.086**	.752**

$p < .10$ * $p < .05$ ** $p < .01$ N = 5,812

While nearly all correlations are significant, none proposes a problem to the research model. The correlations are quite low and therefore the independent variables are considered statistically independent.

Using these selection criteria, 3,681 Efficiency firms, 388 Flexibility firms, and 1743 Mix firms were selected. The financial statement data from the Kauffman Center Financial Statement Database was used to test the characteristics predicted for each sample set of firms. Table 3 lists the variable names and hypothesized directional outcomes. Independent samples t-tests were used to assess the hypotheses.

**TABLE 3
VARIABLE DEFINITIONS**

Variable	Description	Expected Relationship of F relative to E strategy
asstosal	Asset to Sales ratio	high
collper	Collection Period	high
ltoinv	Liabilities to Inventory Ratio	high
qr	Quick Ratio	high
cr	Current Ratio	high
ros	Return on Sales	high
roic	Return on Invested Capital	high

RESULTS

Table 4 presents the mean values of each of the eight key performance ratios for Efficiency and Flexibility firms. As hypothesized, Flexibility firms had a statistically significant (all at $p < .01$) different financial ratio profile. This supports theory that organizing for consistent operational strategy will result in a different financial profile and outcome.

**TABLE 4
EFFICIENCY/FLEXIBILITY MEAN COMPARISON**

Measure	Mean		t-tests^a	
	Eff.	Flex.	df	t
qr	.3951	.7312	4512	-6.015**
cr	2.4272	3.4046	4512	-6.324**
ltoinv	3.8581	4.7161	4512	-2.811**
collper	42.8983	44.1282	4512	-1.212
asstosal	.4572	.4859	4512	-2.572**
ros	.0175	.0369	4512	-8.374**
roic	.0855	.1356	4512	-5.899**

^a independent t-test $p < .10$ * $p < .05$ ** $p < .01$

Table 5 and Table 6 present a comparison of Efficiency to Mix and Flexibility to Mix financial ratio profile. Of significant interest is the comparison of means of financial

performance, specifically Return on Invested Capital. These results marginally support H8a but do not support H8b, and theory argues that there should be differences.

TABLE 5
EFFICIENCY/MIX MEAN COMPARISON

Measure	Mean		t-tests ^a	
	Eff.	Mix	df	t
qr	.3951	.9541	802	-6.673**
cr	2.4272	4.0644	802	-7.057**
ltoinv	3.8581	4.3883	802	-1.055
collper	42.8983	53.8241	802	-5.520**
asstosal	.4572	.6285	802	-7.790**
ros	.0175	.0370	802	-10.570**
roic	.0855	.1334	802	-6.126**

^a independent t-test $p < .10$ * $p < .05$ ** $p < .01$

TABLE 6
FLEXIBILITY/MIX MEAN COMPARISON

Measure	Mean		t-tests ^a	
	Flex	Mix	df	t
qr	.6829	.9541	4124	-2.323*
cr	3.2766	4.0644	4124	-2.501*
ltoinv	4.5373	4.3883	4124	.641
collper	48.1576	53.8241	4124	-5.840**
asstosal	.4859	.6825	4124	-7.603**
ros	.0369	.0370	4124	-6.481**
roic	.1356	.1334	4124	-3.182**

^a independent t-test $p < .10$ * $p < .05$ ** $p < .01$

The clearest plausible explanation of this result is a problem with the research model. The classification of mix firms is an artifact of not being classified as pure E or pure F. This scheme does not take into account the operational level of mixing occurring at the firm level. There may be a threshold level of mixing beyond which firm performance begins to show the theorized negative effects. Up to this threshold, no financial effect may be observable.

DISCUSSION, LIMITATIONS AND FUTURE RESEARCH

This study makes a significant and unique contribution to the field of small firm strategy. First, no other study has tested the theoretical implications of these strategy constructs on financial performance of small firms. Second, no studies have had as powerful a database. Yet,

the sample used for this study only included manufacturing firms for comparability within this study, and generalizability to the entire population of small firms should therefore be done with caution. Efficiency and flexibility strategies are fairly simple to identify in firms that manufacture products (standard versus made-to-order), but may not be so simple to identify in retail or other types of firms. It is also possible that these strategy classifications are not appropriate for small firms outside of manufacturing, or other results would be obtained altogether for non-manufacturing sectors. However, there is no immediate reason to assume that either of these is the case and this should be addressed in subsequent research.

A second limitation is the research model used for this study. All efficiency and flexibility firms were lumped together and treated as adopting pure strategies, while mix firms were coded zero and treated as directly in between efficiency and flexibility firms. This ignores the true variance in strategy implementation, reducing the model's predictive power. Future research should specify a more accurate model that addresses the degree to which a firm mixes strategies and at what point it begins to impact performance. Furthermore, a stronger model would include non-financial measures of firm strategy, for example survey or website measurements.

Another topic that should be addressed in future research is how these strategies develop and change in small firms. It is likely that product and organization are intertwined, which conflicts with some of the traditional thinking that organization follows product (Randolph and Dess, 1984). What an entrepreneur sees as a need in the market may lead him or her toward a standard or made-to-order product, but the entrepreneur will also need to consider the organizational requirements involved when evaluating the overall opportunity. For instance, an entrepreneur may recognize an opportunity within an industry to provide either standard or made-to-order outputs, but that entrepreneur may view the capital requirements of an efficiency strategy as prohibitive and therefore opt to pursue a flexibility strategy. Likewise, there may be identifiable factors that influence strategic change as a firm develops.

All in all, the authors believe that this study provides a significant step forward in entrepreneurial strategy research. Although classifying firms as efficiency, flexibility, and mix is relatively simple, it appears promising given the performance and organizational differences found in this study. Furthermore, the size of the database and the statistical power it represents is a significant contribution to the study. If future research confirms and builds on the concepts and findings of this study, considerable advancements may be made in the field of entrepreneurship regarding organizational development.

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