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**STRATEGY**

**SMALL BUSINESS OPERATIONS STRATEGY:  
ALIGNING PRIORITIES AND RESOURCES**

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**ABSTRACT**

*This article reports the perceptions of small business owner/managers in Jamaica regarding how to use operations strategy for improving firm profitability. The perspectives of classical economics and behavioral theory were integrated to evolve a model of small business operations. Two relevant hypotheses were examined using data from a survey of 101 owner/managers. Product quality is perceived to be of paramount importance but new firms may be less consistent than older small businesses. Owner/managers also perceive that a combination of priorities is necessary with technology adopted to improve the use of labor and materials. Labor emerged as the critical resource factor for executing competitive priorities. The findings have important implications for small business development and turnaround.*

**INTRODUCTION**

Small firms are important for economic progress in many countries and contribute a large portion of jobs to the job pool. In Jamaica, businesses with fewer than ten employees account for about one-third of the total workforce (Planning Institute of Jamaica, 2007). However, like other countries, Jamaica has a high rate of small business discontinuance (Richards, 2006). These closures are costly and painful for owners, employees, and governments. Indeed, the rate of job destruction due to closures can rival the employment created by new ventures (Broersma and Pieter, 1997). Entrepreneurs make judgments based on perceptions of firm value (Burke and Jarratt, 2004). Cressy (2005) noted that small business discontinuance happens when owners feel that the value of the firm is less than the opportunity cost of staying in business. Losses often precipitate this

dilemma (Frazer, 2005). Improper management practice is a major reason for poor performance (Carter and Van Auken, 2006). In particular, few small companies undertake the strategic planning needed to align their operations with environmental dictates. Many firms confine operations to tactical roles and do not exploit this function for successful strategic attacks and defenses that can overcome disadvantages of size, market share, and even proprietary technology (Hayes and Upton, 1998).

Operations strategy refers to the decisions and plans involving developing, positioning, and aligning managerial policies and needed resources for consistency with the overall business strategy (Boyer, Swink, and Rosenweig, 2005). Undesirable outcomes are likely when there is a mismatch between the way resources are deployed and the competitive priorities established by the firm. Regrettably, scholars have paid scant

attention to the connection between these two aspects of operations strategy (Cousins, 2005). This issue is critical for small firms, particularly those in developing countries like Jamaica, because a mismatch can drain scarce resources and erode firm value to the point of business closure.

This article reports the views of Jamaican owner/managers on how to use operations strategy for improving small business profitability. These opinions are important because decision-making in the small enterprise is often informal, intuitive, and invisible (Woods and Joyce, 2003). Understanding the perceptions of owner/managers is a fundamental starting point for crafting plans and policies to combat small business discontinuance.

The status of the Jamaican small business sector is described. A model of small business operations and relevant hypotheses is developed from theory and prior empirical evidence. Then, the sample data and research methodology are presented. Findings from statistical analysis are reported. Implications for small business development and turnaround are also discussed.

### **THE JAMAICAN SMALL BUSINESS SECTOR**

Jamaica is a small, open Caribbean island economy with a population of 2.7 million people. The island relies on tourism, bauxite, sugar, and manufactured goods for export income (Planning Institute of Jamaica, 2007). The country continues to shift towards provision of services contributing 67% of Gross Domestic Product in 2006. Jamaica imports nearly all of its energy needs and has a high public debt burden. Small firms are active in most areas of economy and account for the vast majority of all companies that file tax returns in the country.

The definition of small business affects the eligibility of such firms for benefits such as financing, free support services, and other

incentives (Nappi and Vora, 1980). This definition varies from one country to the next and even between groups within an economy. The Planning Institute of Jamaica (2007) defines a small business as a commercial venture that has fewer than 10 employees. However, the Small Business Association of Jamaica (2007) defines a small firm as one having less than 50 employees.

In addition to one-third of the approximately one million persons in the employed labor force, the small business sector contributes about 12% of all sales reported from General Consumption Tax returns (Planning Institute of Jamaica, 2007). Over 60% of small firms are in urban locations. The sector does little export and retailing is the main business activity. Women own about 40% of small firms. Most small businesses are microenterprises and sole proprietorships.

Viewing small business development as the survival, prosperity, and growth of entrepreneurial ventures from startup through to full maturity, the Government of Jamaica provides financial and technical support with help from international donor agencies. Small business loans are available through the Development Bank of Jamaica, the Micro Investment Development Agency, the Self-Start Fund, and the National Export-Import Bank among others. Technical training is conducted by the Jamaica Business Development Centre and the National Development Foundation of Jamaica. A core function of these agencies is to provide advice about how to build organizational capabilities for competitive advantage and success (Jamaica Business Development Centre, 2004).

Still, small business owners lament high levels of taxation, insufficient incentives, high interest rates, and limited access to governmental contracts. The Planning Institute of Jamaica reported that many firms in the sector are in need of turnaround because of hardships arising from inefficient operations, limited access to markets and financing, and weak business skills.

Although awareness of the importance of small business is increasing, there is a paucity of empirical studies about entrepreneurial practices in small, open, developing economies. Such studies are needed because these small firms are more vulnerable to global jolts due to fragile domestic markets and scarcity of resources. Small firms in Jamaica must also cope with input price pressure from continual depreciation of the Jamaican dollar relative to all tradable international currencies. In this scenario, there is little room for error in business operations.

Honig (1998) examined the importance of human, social, and financial capital for success at 215 informal microenterprises in Jamaica. He concluded that small business profitability is associated with the socioeconomic status and education level of the entrepreneurs. Earlier, Huck and McEwen (1991) reported the impressions of Jamaican entrepreneurs about competences needed to operate a successful small business. They surveyed 54 clients of the National Development Foundation of Jamaica. These entrepreneurs perceived that management, planning and budgeting, and marketing/selling competences are necessary. Female entrepreneurs gave each of these factors a higher importance rating than their male counterparts. Huck and McEwen (1991) also observed that entrepreneurs without prior business experience gave a higher importance rating to starting a new business, advertising and sales promotion, and purchasing than those with previous experience. However, these studies require an extension to uncover the role of operations strategy.

### THEORY AND HYPOTHESES

Entrepreneurs make substantial contributions to economic development by undertaking new combinations of means of production (Schumpeter, 1934). The growing impact small firms have in nations worldwide underscores the need for economic theory

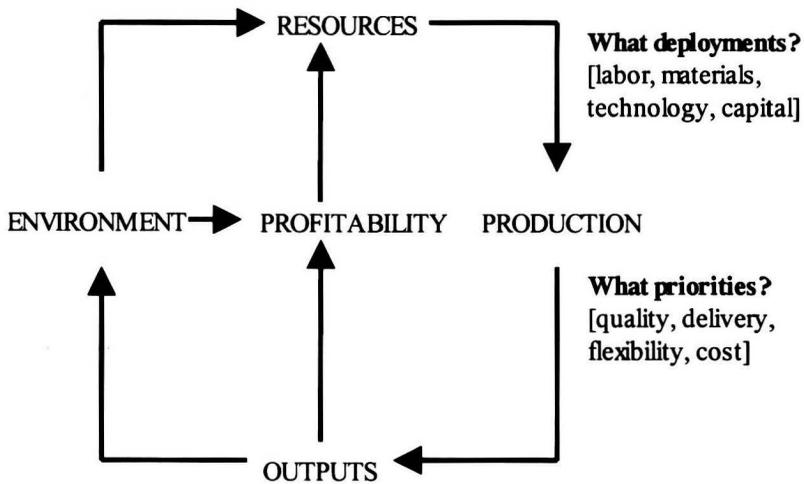
that will better understand and guide their development (Julien, 1993). Theories of the firm are useful for considering organizational objectives and conducting related research. The classical economic theory of the growth firm posited by Penrose (1959) and a behavioral theory of the firm introduced by Cyert and March (1963) are two paradigms often used to investigate management practice.

Penrose (1959) described the firm as a production function, competing for profit at market-determined and using technology to combine resources to generate goods and services for buyers. The firm achieves growth by pursuing opportunities for productive utilization of its resources. As output grows, the technology underlying the production function provides increasing returns to scale, due to declining average cost, and later decreasing returns because average cost starts to rise. A competitive advantage arises from superior skills in combining resources.

Cyert and March (1963) theorized that the firm is an adaptively rational system in which managers seek to satisfy multiple goals by making appropriate decisions about price, output, and internal resource allocation. Imperfections in the decision-making process generate a resource surplus known as *organizational slack*, which acts as a cushion against environmental pressures and facilitates searches for solutions to problems. Outcomes from past searches bring about organizational learning and form the basis of company rules and standard operating procedures.

The model shown in Figure 1 integrates the ideas of Penrose (1959) and Cyert and March (1963) to show small business operations as both a production function and a decision-making system. The firm operates in a state of dynamic equilibrium with its environment

Figure 1 – Simplified Model of Small Business Operations



by exchanging goods, services, information, energy, and capital and other resources. Profits arise from outdoing competitors through these interactions and utilizing resources efficiently (Burke and Jarratt, 2004).

The system works best when production, defined broadly as the process of creating value-added, is able to supply goods and services for which customers are able and willing to pay. Profitability is also enhanced by generating slack outputs, such as net working capital, to increase the pool of available and potential resources for subsequent operations (Daniel, Lohrke, Fornaciari, and Turner, 2004; Lawrence, 1995). The firm must decide what competitive priorities and resource deployments to adopt for maximum value-added (Lowson, 2005). Figure 1 is simplified to highlight these key decisions of operations strategy without the clutter of subsystems. Based on the principle of equifinality embraced by general systems theory, two firms may attempt to obtain the same set of competitive priorities, but deploy resources in different ways resulting in two different operations strategies.

Organizational dysfunctions can erode the resource-base of the firm and precipitate

business failure. Typically, the firm receives early warning signals indicating deviation from the desired path and the need for corrective action. Many small firms experience losses especially during the first few years after startup (Rasheed, 2005). This adversity may arise from environmental factors such as competition or internal reasons such as erroneous managerial decisions. The process of recovery from losses, called turnaround, is of critical importance for small businesses given their high rate of failure. Small firms, in countries like Jamaica, have few strategic options for turnaround. They must rely on operations because they do not have surplus physical assets for retrenchment nor a portfolio of business units for restructuring.

Operations can play a strategic role by focusing resources and capabilities on the priorities needed for competitive advantage (Boyer et al., 2005; Adam and Swamidass, 1989). However, there is scant systematic evidence to inform these choices. This gap in the literature gives rise to the research question: Do Jamaican owner/managers perceive that certain alignments of competitive priorities and resource deployments are significant for improving small business profitability?

### Competitive Priorities

Cyert and March (1963) cited price and output as priorities for decision-making by the firm. From the operations perspective, these priorities form the basis for competition and translate to cost, quality, delivery, and flexibility (Boyer and Lewis, 2002; Ward, McCreery, Ritzman, and Sharma, 1998). *Low cost* arises from productive efficiency that enables the firm to offer low prices relative to competitors. *Quality* refers to the extent of which a product conforms to specifications and design features that satisfies customers. *Delivery* focuses on timely supply of products to customers using methods such as lean or agile operations. *Flexibility* offers customers a range of product options and requires a responsive supply chain to accommodate variations in demand. These four competitive priorities are shown as decision variables in Figure 1 and describe the firm's value proposition to customers.

Boyer and Lewis (2002) suggested that firms must make tradeoffs among competitive priorities. Moreover, Ebben and Johnson (2005) reported evidence showing that small firms that pursued either low cost or flexibility outperformed those attempting to follow both. However, Porter (1996) argued that firms farther from their productivity frontiers do not need to make tradeoffs and are still able to pursue multiple priorities. Interestingly, Ferdows and De Meyer (1990) proposed a sand-cone model wherein the firm avoids tradeoffs altogether by acquiring cumulative capabilities in the sequence: quality, delivery, flexibility, and cost. Recently, Amoako-Gyampah and Meredith (2007) explored 126 manufacturing firms in Ghana and found no evidence of tradeoffs in that developing country. Sum, Kow, and Chen (2004) noted that high performing small firms in Singapore are able to compete successfully using multiple priorities. Therefore, the discussion on tradeoffs seems open for further debate.

**H1:** Jamaican owner/managers do not perceive that tradeoffs are required, among competitive priorities, for improving small business profitability.

### Resource Deployments

A resource is a basic element or factor of production, such as labor, materials, capital, or technology that the firm utilizes to carry out its processes (Peteraf 1993). These resource factors are also shown as decision variables in Figure 1. The firm combines resources to form knowledge and capabilities that lead to competitive advantage (Penrose, 1959). The sustainability of this advantage depends on total factor productivity and the ease of imitating or substituting resources. Regrettably, small firms are usually in need of productivity improvement (Taymaz, 2005).

Some resources might be more critical than others for small business survival and success. Chowdhury and Lang (1996) found that employee productivity was the most important predictor of turnaround at small firms. Profits can be eroded by lost sales due to stockouts or the carrying cost of surplus inventory (Abernathy, Dunlop, Hammond, and Weil, 2000). Arinaitwe (2006) found that technological capability is a major constraint for small firms in developing countries. Carter and Van Auken (2006) cited inaccessibility to debt capital as a reason for small business failure.

Chen and Liaw (2001) observed positive correlation between resource utilization and production competence. Cleveland, Schroeder, and Anderson (1989) posited that production competence has more of an effect on firm performance for certain strategies than for others. Rusjan (2005) found a positive association between business strategic competence and firm profitability in 50 Slovenian manufacturing firms. Kwangseek and Booth (1997) suggested that firms can improve performance through proper alignment between operations

structure and business strategy. Yet, the specific linkage between resource deployments and competitive priorities remains unclear. Thus,

**H2:** Jamaican owner/managers perceive that certain alignments of competitive priorities and resource deployments are significant for improving small business profitability.

Figure 1 and the two research hypotheses form the essence of this preliminary study of alignment between competitive priorities and resource deployments for small firms. Prior research treated these two aspects of operations strategy as separate issues. However, both dimensions must be observed together to better understand the role of operations strategy. This holistic approach begins by using the proposed model to assess the existing situation and plan subsequent actions. The main assumption is that proper alignment of competitive priorities and resource deployments increases value-added outputs for improved profitability, thereby reducing the likelihood of business closure.

### METHODOLOGY

Similar to Huck and McEwen (1991), this study adopted a one-group pretest-posttest research design using field survey data for statistical analysis. Although this approach can reveal associations between key variables, interpretation of the findings must be mindful of plausible rival hypotheses. The study took cognizance of age maturation, sample selection bias, and non-response bias as potential issues of validity. Prior research suggests that the procedures, used in this study, are sufficiently reliable for exploring owner/managers' perceptions of small business success factors in Jamaica (Honig, 1998; Huck and McEwen, 1991).

### Sample

The survey captured demographic data on small business activity, location, age, employees, and owner/manager gender.

Respondents rated the importance of each competitive priority and resource factor on a five-point horizontal, numeric scale. This method is relatively unrestrictive and provides equal interval data for statistical analysis and an absolute level of measurement. The questionnaire was pretested and validated using responses from seven owner/managers in Kingston, Jamaica and then given to a wider audience by field agents (graduate students of Northern Caribbean University). These field agents visited owner/managers at their business locations, explained the purpose of the survey, and requested participation. This approach is faster, with a lower non-response bias than mail or telephone surveys, but runs the risk of sample selection bias (Alreck and Settle, 1985).

As planned, 20 owner/managers of small firms with less than 50 employees were contacted in each of the eight Jamaican parishes readily accessible by the field agents. A total of 101 persons were willing to participate in the survey, which represents a response rate of 63%. Each owner/manager filled out the questionnaire and returned it to the field agent. The survey process lasted for two weeks, at the end of which the forms were submitted for coding. Responses came from the parishes of Manchester (18), St. James (15), Hanover (9), St. Andrew (20), Trelawny (5), Westmoreland (9), St. Catherine (14), and Kingston (11).

### Measures

Ward, McCreery, Ritzman, and Sharma observed, from factor analysis of various measures, that "each of the four competitive priorities can be captured reasonably, if imperfectly, in a single dimension." (1998: 1038). Therefore, this study used one variable from their list of factors to measure each priority. Cost (COST) was measured as the importance of low input prices. Quality (QUAL) referred to the importance of offering good performing products. Delivery (DEL) was noted as the importance of having products available in a timely

manner. Flexibility (FLEX) looked at the importance of offering customers a range of product options. Respondents rated the importance of each competitive priority on a five-point scale (a score of 1 denoted the lowest level of importance).

Each resource factor was also measured along one dimension. This is in keeping with descriptions of resource factors in the literature and the methodology of studies such as Chen and Liaw (2001). Using the same scale, respondents were asked to rate the importance of four resource factors for improving firm profitability: use of labor (LABOR), use of materials and supplies (MAT), use of technology (TECH), and use of debt capital (DEBT).

Firm age (AGE) was a control variable. Carter and Van Auken (2006) observed that bankrupt small enterprises appear to be older than healthy enterprises. Dodge and Robbins (1992) estimated that about 55% of small firms fail inside of five years and 81% within ten years. The method used to classify the age into groups was similar to that adopted by Morrison, Breen, and Ali (2003).

Firm size (SIZE) was also a control variable. Rutherford, McMullen, and Oswald (2001) used an artificial neural network approach to classify 4,637 U.S. firms listed in the National Survey of Small Business Finances based on 13 indicators of business success. They concluded that firm size must be considered when attempting to identify predictors of small business success or survival.

### **Data Analysis**

The data was coded and the measures examined for central tendency, dispersion, distribution shape, and differences in means. The sample profile was examined and the mode, mean, standard deviation, skewness, and kurtosis was computed to check for gaps, extreme values, strange patterns, and unexpected variability (Isaac and Michael, 1990).

T-tests were used to explore differences between sample means in respect of business activity and gender. Similar to Huck and McEwen (1991), business activity was classified as either goods or services. Goods are more tangible and can give rise to operational challenges such as spoilage, shrinkage, obsolescence, and surplus carrying costs. At service firms, customers are more involved with the process of supply, which can cause substantial variability in the quality of service delivery. For gender, Alowaihan (2004) found that women-owned firms had lower financial performance than men-owned firms in Kuwait.

Firms less than five years old were compared to the others by conducting t-tests to identify differences between means in respect of the eight operations strategy factors. Pearson product-moment correlation coefficients were computed to identify linear associations among pairs of measures. Simple regression analyses were used to investigate causal relationships between correlated measures. All tests were conducted at .05 level of significance to reduce the likelihood of chance differences in the data (Type I error), albeit at the risk of overlooking some genuine differences (Type II error).

### **RESULTS**

The features of the sample are similar to those reported by the Planning Institute of Jamaica for the small business sector. Most owner/managers (62%) are involved with goods-oriented firms. Retailing (39%) is the largest business category in the sample (Table 1). Five types of business activities account for 81% of the research sample. Female owner/managers represent 46% of the sample, which is close to the 40% figure indicated by the Planning Institute of Jamaica. A large majority of female respondents (72%) are engaged in retailing, personal care, or restaurants. Male respondents span a broader range of activities.

Of the forty-five firms less than five years

old, 23 are owned and operated by women. The trend shown in Figure 2 mirrors anecdotal reports of small business attrition as firms age. The Planning Institute of Jamaica (2007) reported that the large majority of small firms are sole proprietorships. In the research sample, most firms (65%) employ less than five persons, 86% have less than 10 employees, and 91% employ less than 15 people. Carter and Van Auken (2006) noted that sole proprietorships and partnerships, particularly those in retailing, are more likely to go bankrupt than other small businesses. Hall (1992) observed negative correlation between business insolvency and firm size and inferred that this problem might be overcome through better operations management.

Results from t-tests, for all measures, revealed no significant differences in means with respect to either business activity or gender. Collins-Dodd et al. (2004) examined 160 sole proprietors and also found that differences due to gender are not significant. Furthermore, Perry (2002) examined the influence of gender on a paired sample of 152 failed and non-failed US small firms and concluded that there is no significant difference in planning and decision-making strategies.

When firms less than five years old were compared with the others, quality emerged as the only factor having a significant difference in means ( $t = 2.117$ ;  $p = .037$ ). The mean score for QUAL, for firms less than five years old, is 4.30 with a standard deviation of 1.29. For older businesses, the mean score for QUAL is higher at 4.71 with a lower standard deviation of 0.60. Therefore, inconsistent product quality could be a reason for the higher rate of failure among business startups.

Means, standard deviations (s.d.), and correlation coefficients for all variables in this study are shown in Table 2. The variables are below acceptable thresholds for skewness and kurtosis (2.0) and also variance inflation factors (10.0) indicating no

major issues with data normality or multicollinearity that violate assumptions required for applying general linear models. The scores for standard deviation are all within acceptable limits. The perceived order of importance of competitive priorities ranked by descending means is: QUAL, DEL, FLEX, and then COST. This observation is similar to the sand-cone sequence proposed by Ferdows and De Meyer (1990) for building competitive capabilities and is similar to the empirical findings of Sum et al. (2004). LABOR has the highest mean of the four resource factors and ranks second overall to QUAL. For firms less than five years old, LABOR has a mean of 4.22, less than the score for the older firms (mean = 4.40), but the t-test result showed no significant difference. DEBT is perceived to be the least important resource factor.

The findings support Hypothesis 1. Correlation coefficients between pairs of competitive priorities are all positive, suggesting that owner/managers do not perceive a need for tradeoffs among individual priorities. However, two sets of priorities are significant: (1) QUAL, DEL, and COST and (2) QUAL and FLEX. The correlation between QUAL and DEL approached significance ( $p$ -value = .09). The results suggest that tradeoffs occur between sets of competitive priorities and support the logic of Cyert and March (1963) that the firm must decide its outputs for goal achievement.

The findings also support Hypothesis 2. LABOR is positively correlated with all competitive priorities except COST (Table 2). Studies have identified labor productivity as the critical driver of competitive strategy (Gazo and Quesada, 2005). The lack of correlation between use of LABOR and COST is perhaps due to the way the latter was measured, namely as input price only.

Based on correlation results, QUAL, DEL, and FLEX were regressed individually on

**Table 1 – Small Business Categories Represented in the Research Sample**

Business Category	Total Firms	Female owned
Retailing	39	14
Personal care	14	11
Manufacturing	12	3
Restaurant	9	8
Transportation	7	2
Health care	4	3
Computer services	4	2
Electrical services	3	0
Other	9	3
<b>Total</b>	<b>101</b>	<b>46</b>

**Figure 2 - Age Profile of the Sample of Jamaican Small Firms**



**Table 2 – Descriptive Statistics and Correlation Coefficients**

	Mean	s.d.	1	2	3	4	5	6	7	8	9
1 <b>COST</b>	3.53	1.25									
2 <b>QUAL</b>	4.53	0.98	.28**								
3 <b>FLEX</b>	3.87	1.31	.12	.24*							
4 <b>DEL</b>	4.30	1.11	.26*	.17	.11						
5 <b>LABOR</b>	4.32	1.06	-.01	.43**	.24*	.37**					
6 <b>MAT</b>	2.90	1.69	.06	-.09	.03	.02	.08				
7 <b>TECH</b>	3.35	1.42	-.17	.02	.20*	.15	.27**	.23*			
8 <b>DEBT</b>	2.78	1.47	.09	-.07	-.14	-.01	.05	.20*	.15		
9 <b>AGE</b>	2.25	1.45	-.09	.06	.02	-.14	-.07	.16	-.00	.03	
10 <b>SIZE</b>	1.65	1.11	.08	-.10	.01	.09	.02	.11	.10	.25*	.40**

• p < .05, \*\* p < .01, two-tailed tests, N =101

LABOR and all three found to be significant (see Models 1, 2, and 3 in Table 3). The standard errors are small relative to the regression coefficients. Unexplained variance is high for all three models and may be due to other factors such as the education level and socioeconomic status of the owner/manager, as suggested by Honig (1998).

Tse and Soufani (2003) argued that the success of small business strategy depends on technology. Table 2 shows that TECH has a positive correlation with FLEX but an even stronger association with LABOR. This multicollinearity suggests that TECH influences FLEX through the LABOR variable. Maldfassi and Rodriguez (2005) noted that the productivity of workers in Chile depended on the available technology assets per worker. Regression of LABOR on TECH shows significant results (Model 4 in Table 3). So, too, does regression of MAT on TECH (Model 5). These findings are consistent with the production function described by Penrose (1959) and internal resource allocation cited by Cyert and March (1963).

### **Other Findings**

The positive correlation between SIZE and AGE is not surprising. Companies tend to employ more workers as they expand operations over time. Results from regression of SIZE on AGE were significant ( $F\text{-ratio} = 19.057$ ;  $R^2 = .161$ ). This suggests that preventing business closures not only saves existing jobs, but also creates more employment.

There is no significant association between DEBT and any competitive priority. Kotey (1999) observed that successful small firms are reluctant to borrow money and prefer to maintain low levels of debt. Small business failure is positively associated with high rates of interest (Everett and Watson, 1998). Historically, Jamaica has high rates of interest; this has been identified as a major problem by local firms (Private Sector

Organization of Jamaica, 1993). DEBT is positively correlated with MAT. This indicates that small firms might borrow to fund inventory. DEBT also has a positive correlation with SIZE suggesting that the larger firms in the sample could be more inclined to acquire loans. However, regression of DEBT on SIZE revealed no significant results. Also, t-tests revealed no significance difference in the mean importance of DEBT between firms less than five years old and the older businesses.

### **DISCUSSION AND IMPLICATIONS**

This study surveyed the opinions of Jamaican owner/managers about how to use operations strategy for improving small business profitability. The findings support the proposed model of small business operations and the research hypotheses. Product quality is perceived to be the competitive priority of paramount importance. However, owner/managers of new businesses are less consistent in their impressions of this factor. The owner/managers believed that small firms should compete on the basis of either: (1) quality, delivery, and cost or (2) quality and flexibility. Use of labor is viewed as the critical link between resource factors and competitive priorities. Technology is deemed important for using labor and materials. Debt capital is considered the least important resource factor. Business activity (goods versus services), owner/manager gender, firm age, and firm size do not seem to affect these findings. Small firms are likely to employ more people as they mature.

Due to the exploratory nature of this study, caution must be exercised when drawing conclusions from these findings. Yet, within the scope of the data presented, it seems that the answer to the research question is yes. Jamaican owner/managers perceive that certain alignments of competitive priorities and resource deployments are important for improving small business profitability. Such alignments are necessary to avert or correct organizational dysfunctions from improper operations. This is achieved by choosing an

**Table 3 – Results of Simple Regression Analyses**

	Model 1	Model 2	Model 3	Model 4	Model 5
	QUAL	FLEX	DEL	LABOR	MAT
<b>LABOR</b>	.446** (.083)	.359** (.099)	.385** (.082)		
<b>TECH</b>				.255** (.083)	.276** (.108)
Intercept	2.415** (.341)	2.244** (.408)	2.509** (.338)	3.150** (.289)	1.702** (.374)
F-ratio	27.778**	13.016**	21.948**	9.435**	6.488*
R <sup>2</sup>	.225	.117	.185	.088	.063

Note: Standard errors are shown in parentheses below the coefficients

\* p < .05, \*\* p < .01, N = 101

effective set of competitive priorities, applying the necessary human effort, and using appropriate technology to boost multifactor productivity.

This article contributes to the literature by proposing a model of small business operations as both a production function and a decision-making system. The model helps managers to identify holistic solutions for improving small business profitability. Figure 1 shows variables and flows that serve as checkpoints to locate specific challenges and opportunities for managerial action. The significant findings highlight some key questions to be answered for a successful operations strategy. Does the small business compete using a set of priorities including product quality? Are competitive priorities congruent with resource deployments? Is the level and consistency of labor productivity sufficient to execute competitive priorities? Is technology appropriate to drive labor and material efficiency?

For theory development, the findings show that models of small business operations strategy need to include not only competitive priorities but also the companion resource deployments for generating value-added outputs. This systems perspective is

necessary to maximize a good fit with the business strategy and mission of the small business. The findings also suggest that theory should consider the likelihood of small firms making tradeoffs between sets of competitive priorities.

The limitations of this study provide opportunities for future research. Due to the focus on small businesses in Jamaica, the findings may not be conducive to making generalizations elsewhere. Do the results hold in other environments? The role of subsystems in formulating operations strategy was beyond the scope of this exploratory study. However, the model can be expanded to accommodate such inquiry.

This article began by acknowledging the pivotal role that small businesses play in the economic progress of many countries. The proposed model and perceptions of Jamaican owner/managers suggest that operations strategy is a critical component of any plan to improve small business profitability. The findings of the study have important implications for small business development and turnaround in support of this goal.

**Small Business Development**

Sum et al. (2004) explored the use of operations strategy for small business

development at a sample of 43 high performing small and medium-sized enterprises in Singapore. Data collected by mail survey, for taxonomic descriptions of operations strategy, were grouped into three clusters based on competitive priorities. The cluster called "all-rounders" pursued the four priorities, "efficient innovators" had outstanding performance in cost, delivery, and flexibility, and "differentiators" focused on quality, delivery, and flexibility. Sum et al. (2004) concluded that high-performing firms could compete effectively in the same industry using different combinations of priorities. They also concluded that operations strategy is the dominant competitive tool at successful enterprises and that the development of capabilities followed the sand-cone approach proposed by Ferdows and DeMeyer (1990).

The research findings agree with Sum et al. (2004) that small firms should compete using multiple priorities. However, the results go further to imply that all small firms should strive for superior product quality irrespective of the other priorities in the set. Indeed, inconsistent product quality could be a reason for the high rate of small business closures in the early years following startup. The findings also imply that, in using the sand-cone sequence, small firms can skip the development of capabilities that are not in the chosen set of competitive priorities. For example, if quality and flexibility make up the set of priorities, the firm should focus firstly on developing quality and then on flexibility because the latter ranks lower on the sand-cone order. Delivery and cost would be omitted because they do not form part of the required set of priorities.

Sum et al. (2004) did not consider the importance of resource deployments for high performance. However, the findings of this study imply that labor should be included as an area for developing capability. Successful execution of competitive priorities is not automatic. The owner/managers perceived that the use of labor is critical regardless of the set of priorities chosen.

### **Small Business Turnaround**

Rasheed (2005) explored the likelihood that small business owner/managers will choose growth or retrenchment as a turnaround strategy at 68 government contractors listed with the United States Small Business Administration. He concluded that a growth strategy, such as diversification and vertical or horizontal growth, will be pursued if owner/managers perceive high levels of past financial performance, and if sufficient resources are available. Chowdhury and Lang (1996) assessed the role of efficiency strategies at 153 publicly traded small firms using secondary data from Dialog Information Services Disclosure. They concluded that timely cutbacks in employees are needed to boost productivity in the short-term. Further, entrepreneurial actions, such as sales growth, might be beneficial after cutbacks are used to overcome the immediate emergency.

Importantly, these studies identified the need for adequate resources and increased employee productivity to achieve small business turnaround. The research findings concur with these observations. Owner/managers perceive that labor is key for executing competitive priorities while technology, materials, and debt capital should be deployed in specific ways. However, the remedies for turnaround, offered by both Rasheed (2005) and Chowdhury and Lang (1996), are unsuitable for the microenterprises and sole proprietorships forming the bulk of the small business sector in Jamaica.

Instead, the research findings imply that sales growth can be adopted as a turnaround strategy by pursuing one of two sets of competitive priorities: (1) quality, cost and delivery or (2) quality and flexibility. As mentioned before, Ebben and Johnson (2005) reported evidence showing that small firms that pursued either low cost or flexibility outperformed those attempting to follow both. Therefore, the two sets of competitive priorities seem worthy of

consideration as turnaround strategy because they have no conflict between cost and flexibility.

Rather than employee cutbacks, the research findings imply that small firms should use technology to boost labor productivity for turnaround. Maldfassi and Rodriguez (2005) found that technology is a determinant of worker productivity. Also, Carter and Van Auken (2006) observed that bankrupt small firms are less likely to use the Internet in their operations than non-bankrupt firms.

## REFERENCES

- Abernathy, F. H., Dunlop, J. T., Hammond, J. H., & Weil, D. (2000). Control your inventory in a world of lean retailing. *Harvard Business Review*, 78(6): 169–176.
- Adam, E.E. & Swamidass, P. M. (1989). Assessing operations management from a strategic perspective. *Journal of Management*, 15(2): 181–203.
- Alowaihan, A. K. (2004). Gender and business performance in Kuwaiti small firms: A comparative approach. *International Journal of Commerce & Management*, 14(3/4): 69–82.
- Alreck, P. L. & Settle, R. B. (1985). *The Survey Research Handbook*. Irwin: Homewood, Illinois.
- Amoako-Gyampah, K. & Meredith, J. (2007). Examining cumulative capabilities in a developing economy. *International Journal of Operations and Production Management*, 27(9): 928–944.
- Arinaitwe, S. K. (2006). Factors constraining the growth and survival of small-scale businesses: A developing countries analysis. *Journal of the American Academy of Business*, Cambridge, 8(2): 167–178.
- Boyer, K. K., Swink, M., & Rosenzweig, E. D. (2005). Operations strategy research in the POMS Journal. *Production and Operations Management*, 14(4): 442–449.
- Boyer, K. K. & Lewis, M. W. (2002). Competitive priorities: Investigating the need for tradeoffs in operations strategy. *Production and Operations Management*, 11(1): 9–20.
- Broersma, L. & Pieter, G. (1997). Job creation and job destruction by small firms: An empirical investigation for the Dutch manufacturing sector. *Small Business Economics*, 9(3): 211–224.
- Burke, I. G. & Jarratt, D. G. (2004). The influence of information and advice on competitive strategy definition in small and medium sized enterprises. *Qualitative Market Research*, 7(2): 126–139.
- Carter, R. & Van Auken, H. (2006). Small firm bankruptcy. *Journal of Small Business Management*, 44(4): 493–507.
- Chen, L. & Liaw, S. (2001). Investigating resource utilization and product competence to improve production management: An empirical study. *International Journal of Operations & Production Management*, 21(9/10): 1180–1199.
- Chowdhury, S. & Lang, J. R. (1996). Turnaround in small firms: An assessment of efficiency strategies. *Journal of Business Research*, 36(2): 169–179.
- Cleveland, G., Schroeder, R. G., & Anderson, J. C. (1989). A theory of production competence. *Decision Sciences*, 20(4): 655–668.
- Collins-Dodd, C., Gordon, I. M., & Smart, C. (2004). Further evidence on the role of gender in financial performance. *Journal of Small Business Management*, 42(4): 395–417.
- Cousins, P. D. (2005). The alignment of appropriate firm and supply strategies for competitive advantage. *International Journal of Operations & Production Management*, 25(5/6): 403–428.
- Cressy, R. (2006). Why do most firms die young? *Small Business Economics*, 26(2): 105–109.
- Cyert, R. M. & March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.

- Daniel, F. Lohrke, F. T., Fornaciari, C. J., & Turner, J. R. (2004). Slack resources and firm performance: A meta-analysis. *Journal of Business Research*, 56(6): 565–578.
- Dodge, R. H. & Robbins, J. E. (1992). An empirical investigation of the organizational life cycle model for small business development and survival. *Journal of Small Business Management*, 30(1): 27–37.
- Ebben, J. J. & Johnson, A. C. (2005). Efficiency, flexibility, or both? Evidence linking strategy to performance in small firms. *Strategic Management Journal*, 26(13): 249–254.
- Everett, J. & Watson, J. (1998). Small business failures and external risk factors. *Small Business Economics*, 11(4): 371–390.
- Ferdows, K. & De Meyer, A. (1990). Lasting improvements in manufacturing performance: In search of a new theory. *Journal of Operations Management*, 5(1): 42–56.
- Frazer, G. (2005). Which firms die? A look at manufacturing firm exit in Ghana. *Economic Development and Cultural Change*, 53(3): 585–617.
- Gazo, R. & Quesada, H. J. (2005). A review of competitive strategies of furniture manufacturers. *Forest Products Journal*, 10(4): 4–12.
- Hall, G. (1992). Reasons for insolvency amongst small firms – A review and fresh evidence. *Small Business Economics*, 4(3): 237–250.
- Hayes, R. H. & Upton, D. M. (1998). Operations-based strategy. *California Management Review*, 40(4): 8–25.
- Honig, B. (1998). What determines success? Examining the human, financial, and social capital of Jamaican micro entrepreneurs. *Journal of Business Venturing*, 13(5): 371–394.
- Huck, J. F. & McEwen, T. (1991). Competences needed for small business success: Perceptions of Jamaican entrepreneurs. *Journal of Small Business Management*, 29(4): 90–93.
- Isaac, S. & Michael, W. B. (1990). *Handbook in Research and Evaluation*. Second Edition. Edits Publishers: San Diego, California.
- Jamaica Business Development Centre. (2004). <http://www.jbdc.net>.
- Julien, P. (1993). Small business as a research subject: Some reflections on knowledge of small businesses and its effects on economic theory. *Small Business Economics*, 5(2): 157–166.
- Kotey, B. (1999). Debt financing and factors external to the business. *International Small Business Journal*, 17(3): 11–29.
- Kwangseek, C., Booth, D., & Hu, M. (1997). Production competence and its impact on business performance. *Journal of Manufacturing Systems*, 16(6): 409–421.
- Lawrence, W. W. (1995). Business turnaround and organizational slack: An empirical investigation. (Doctoral dissertation, Nova Southeastern University, 1995). Dissertation Abstracts International, A 56/11, 4462.
- Lowson, R. H. (2005). Retail operations strategies: Empirical evidence of role, competitive contribution, and life cycle. *International Journal of Operations & Production Management*, 25(7/8): 642–680.
- Maldfassi, J. O. & Rodriguez, M. A. (2005). The impact of technology assets on small firm's productivity: Empirical findings in Chile. *International Journal of Business Performance Management*, 7(2): 191–198.
- Morrison, A., Breen, J., & Ali, S. (2003). Small business growth: Intention, ability, opportunity. *Journal of Small Business Management*, 41(4): 417–425.
- Nappi, A. T. and Jay, V. (1980). Small business eligibility: A definitional issue. *Journal of Small Business Management*, 18(4): 22–27.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. Oxford: Basil Blackwell.
- Perry, S. (2002). A comparison of failed and non-failed small businesses in the United States: Do men and women use different planning and decision making

- strategies? *Journal of Developmental Entrepreneurship*, 7(4): 415–428.
- Peteraf, M. A. (1993). The cornerstones of competitive advantage: The resource-based view. *Strategic Management Journal*, 14(2): 97–111.
- Porter, M. E. (1996). What is strategy? *Harvard Business Review*, 74(6): 61–78.
- Planning Institute of Jamaica. (2007). Economic and Social Survey – Jamaica 2006. Government Printing Office.
- Private Sector Organization of Jamaica. (1993). 1993 PSOJ/USAID Business Behaviour Survey of Jamaican Firms. A Project of the National Action Plan.
- Rasheed, H. S. (2005). Turnaround strategies for declining small business: The effects of performance and resources. *Journal of Developmental Entrepreneurship*, 10(3): 239–252.
- Richards, N. (2006). Jamaica failing its businesses. *Jamaica Gleaner*. July 7.
- Rusjan, B. (2005). Model for manufacturing strategic decision-making. *International Journal of Operations and production Management*, 25(7/8): 740–761.
- Rutherford, M., McMullen, P., & Oswald, S. (2001). Examining the issue of size and the small business: A self organizing map approach. *The Journal of Business and Economic Studies*, 7(2): 64–80.
- Small Business Association of Jamaica. (2007). <http://www.sbj.org.jm>.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Sharma, A. & Upneja, A. (2005). Factors influencing financial performance in small hotels in Tanzania. *International Journal of Contemporary Hospitality Management*, 17(6/7): 504–512.
- Sum, C., Kow, S., & Chen C. (2004). A taxonomy of operations strategies of high performing small and medium enterprises in Singapore. *International Journal of Operations & Production Management*, 24(3/4): 321–348.
- Taymaz, E. (2005). Are small firms really less productive? *Small Business Economics*, 25(5): 429–438.
- Tse, T. & Soufani, K. (2003). Business strategies for small firms in the new economy. *Journal of Small Business and Enterprise Development*, 10(3): 306–321.
- Ward, P. T., McCreery, J. K., Ritzman, L. P., & Sharma, D. (1998). Competitive priorities in operations management. *Decision Sciences*, 29(4): 1035–1046.
- Woods, A. & Joyce, P. (2003). Owner-managers and the practice of strategic management. *International Small Business Journal*, 21(2): 181–194.

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