Extrinsic and intrinsic determinants of entrepreneurial growth of bangladesh: an empirical examination

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Abstract

Entrepreneurial growth is predicted to be related to micro variables or intrinsic determinants (motivations) and macro variables or extrinsic determinants (environmental infrastructure elements) but in a differential way. Infrastructure variables are tested as moderators in the motivation-growth relationship. Motivations are further categorized into intrinsic pull and extrinsic push factors. A rich sample of 395 recently- minted entrepreneurs and concerned institutions of Bangladesh were surveyed. Results essentially confirmed the predictions, with motivations playing a larger role than anticipated. Implications were discussed for policymakers charged with the responsibilities of economic development through entrepreneurship.

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[1] The ensuing discussion on the behavioral approach and indicative approach heavily draws upon earlier study by Besrat Tesfaye (1993), Determinants of Entrepreneurial Process, ISBN 91-7153-158-0 and Jahangir H. Khan (2004), determinants of Small Enterprise development of Bangladesh, ISBN 91-7265-904-1, School of Business report No. 2004:2.

Introduction

Regardless of the economic system, a question frequently posed is how to induce economic growth. Small business growth is emerging as a global phenomenon. New ventures are forming at unparalleled rates, and the spirit that infuses them is reshaping economies around the world (Byrne, 1993). Entrepreneurship and small businesses have been designated as the "engines of growth" because of their job creating phenomenon, not only in the advance countries (Birch, 1987; Dimo 2007) but also developing and privatizing economies across the global' Governments and policymakers have become keenly aware of the economic development benefits that are derived from the establishment and growth of entrepreneurial endeavors.

Surprisingly very few theoretical, quantitative, and rigorous literature focuses on how and why entrepreneurs decide to develop their firms (Ward, 1993, Khan, 2004). One of the fundamental problems is how growth is defined. Growth intentions and enterprise expansion can be investigated through various conceptual approaches. Entrepreneurial aspirations, willingness, intentions, motives, and expansion plans are similar elements set forth in the existing literature to describe small business growth.

There are several major limitations of current research in the area of entrepreneurial expansion. Most studies define entrepreneurial growth as an one-dimensional construct operationalzed by a variety of growth measures, ranging from increases in venture capital and market share to growth in sales revenue, accounting-based return on investment (ROI), or number of employees.

Other researchers have found entrepreneurial orientation to be a key determinant of small firm growth. Birch (1987) argued that attitudes rather than sector or location determine growth and success. Brown (1995) found that entrepreneurial orientation had a positive impact on small firm growth. Fox (1996) pointed out that many entrepreneurs believe that growth is as much a matter of attitude as it is of economic aggregates. However, little evidence exists to support either argument.

Visions must be transformed into intentions, which are the precursor of behavior. Two environmental forces shape and influence entrepreneurial decisions to grow their businesses. On a micro level, internal factors such as the motivations and aspirations of the entrepreneur are critical to an understanding of small business growth.

Behavior and attitudes are often formed by motivations that are internalized by the individual entrepreneurs.

On a macro level, the external environment also plays a central role in shaping entrepreneurs' intentions to grow and develop their enterprises. External factors such as public policy, market infrastructure, financial markets, and technological development have an impact on entrepreneurs' perceptions and actions related to small business growth (Osvald and Rabin 2008).

Consequently, researchers need to establish and measure accurate growth intentions and expansion plans, and identify key predictors that encourage or discourage entrepreneurs' willingness to seek growth for their enterprises. Therefore, this paper has three central objectives: (1) to identify a series of accurate and comprehensive growth intention measures; (2) to explore the relationships and dynamics between internal forces associated with motivations and aspirations of entrepreneurs and external forces such as market infrastructure, public policy, and local support ser vices; and (3) to test a series of hypotheses regarding the relationships between the internal and external factors and entrepreneurial growth.

Presently, there is a general lack of understanding of how entrepreneurial growth intentions and expansion plans take shape. If a preliminary model based on the relationships of the internal and external environmental forces can be found, more elaborate predictors can be created to help explain and support entrepreneurship and small business development.

Previous research

The organizational scholars have increasingly recognized the importance of the research on new ventures (Carter et al, 1994; Eisenhardt and Shoonhoven, 1990; Romanelli, 1989; Harry, 2008). Indeed, entrepreneurial growth has been seen as a valuable outcome of administrative and technological innovation (Tushman and Anderson, 1986), job creation (Birley, 1986), and the competitive disciplining of industries (Scherer and Ross, 1990). However, a coherent the ory of entrepreneurial growth is lacking (Ardishvili et a!, 1998), despite the recent concentration of growth studies.

A considerable number of streams of research in the areas of entrepreneurial growth are available. The first stream, the strategic perspective of entrepreneurial growth, is consistent with the tenet of strategic management and organization theory, where there is considerable evidence that a firm's strategy, structure, process, environment, and the interface

among these variables influence entrepreneurial growth.

The studies in this direction are mainly concerned with predictors such as industry categories (Hay and Ross, 1989), entry barriers (McDougall and Robinson, 1988), environmental munificence and dynamism (Covin and Covin, 1989; Osvald and Rabin 2008), competitive strategy and structure (Covin and Slevin, 1990), and the interaction between structural, cultural, and environmental factors (Fombrun and Wally, 1989). For example, Pearce, Robbins, and Robinson (1987) examined the impact of formal strategic planning activities on financial performance. Cragg and King (1988) evaluated the relationship between a wide range of planning activities in small firms and various performance measures. Boag (1987) investigated the linkages between control systems and performance in a small business context. Covin and Slevin (1989) found a systematic relationship between managerial orientation, strategic posture, and firm performance under different environ-mental contexts. In a longitudinal study of 140 independent banks, Bamford, Dean, and McDougall (1996) examined the initial founding conditions and new venturing perfor-mance.

A number of similar researches in this area focused on the initial founding conditions of new ventures and the process of founding on their subsequent growth. Duchesneau and Gartner (1990) and Harry (2008) found that emphasis upon a number of formal planning models, including assessing the market, considering a number of frictional areas, and devoting more time to planning, were all related to entrepreneurial growth.

An empirical study by Aldrich, Rosen, and Woodward (1987) confirmed that networks may have an impact not only on the process of founding but also on the later practice and growth of the business. There is also a long tradition of studying the financing of new firms – a part of the entrepreneurial process that is clearly central to the assembly of resources. These studies are mainly concerned with the influence of the amount of initial capital and the sources of the capital on subsequent entrepreneurial growth (Bruno and Tyebjee, 1984; Dunkelberg et al, 1987).

Even though research in this direction illuminates the usefulness of certain activities and strategies in relation to entrepreneurial growth, it falls short in providing policy guidelines regarding how to promote entrepreneurial growth at the macro policy level. The studies also are limited because few take into account the impact of the individual entrepreneur.

The second stream of research, the micro behavioral perspective, is primarily concerned with the characteristics of

individual entrepreneurs, including their experience, their education, and their psychological makeup such as need for achievement, locus of control, risk-taking behavior, sacrifice, and motivation. For example, Bailey (1986) found that a certificate of education or trade qualification was related to a higher index of growth for his sample of 67 Australian entrepreneurs. Breadth of experience, functional experience, and management experience tend to be viewed as major predictors of entrepreneurial growth (Davidsson, 1991). The literature on the psychological characteristics of entrepreneur's demonstrate the diversity of approaches used by different researchers. In their literature review, Cooper and Gimeno-Gascon (1992) found that 31 different attributes such as sacrifice, motivation, intensity, and risk-taking be- havior, have been investigated to determine their relationships to entrepreneurial growth. Overall, research findings in this direction have been extremely inconsistent and contradictory, especially the findings of studies narrowly focused on the independent effect of the psychological make-up of entrepreneurs.

The most interesting sub-streams of research in the micro entrepreneurial growth literature is the motivation question: What are the motivational factors that differentiate entrepreneurs from non-entrepreneurs? Why would an entrepreneur assume the personal, social, and financial risks associated with initiating a venture? Since the early McClelland studies (1965), many researchers have been fascinated by the elucidation of motivation factors. A host of researchers of entrepreneurship have studied motives as a distinguishing psychological characteristic of entrepreneurs. For example, on the basis of the theory of satisfaction, several scholars suggested that entrepreneurs create businesses because they want to satisfy a need for achievement. The scholars argued that entrepreneurs expect to be recognized and appreciated when they solve a problem largely through their own efforts. Other researchers, who advocated a goal theory, contended that entrepreneurs venture into a business to pursue a long-term ambition, which may be independence, personal development, or escape. There are also researchers who subscribe to a psychoanalytic theory and argue that entrepreneurs create businesses because of their ambivalence toward authority. Entrepreneurs would like to lead rather than be led. They want to create their own space and environment.

There are a number of studies categorizing entrepreneurial motives into intrinsic, "pull" factors and extrinsic "push" factors. The "pull" theories

suggest that entrepreneurship is affected by the need for achievement from within (McClelland, 1961), internal locus of control; the belief that the outcome of events will be influenced by an individual's efforts (Brockhaus, 1982); the practical purposive ness of the individual's actions (Bird, 1989); risk-taking propensities (Slevin and Covin, 1992); and the belief in the individual's capacity to perform a task (Boyd and Vozikis, 1994). By contrast, the "push" theories contended that negative factors, such as conflicts at one's workplace, job loss, and limited alternative opportunities (Greenberger and Sexton, 1988), resulted in some individuals being "pushed" into entrepreneurship.

Despite the volume of research concerning the relationship between motivation and entrepreneurship, surprisingly little attention has been paid to the question: To what extent do the motivational factors determine entrepreneurial growth? Although a definitive link between entrepreneurial motives and growth has been established, it is not surprising that some authors have called for research on the entrepreneurial process, especially growth and expansion, and not on the psychological profile of the entrepreneur

(Gartner, 1988; Sandberg and Hofer, 1987, Bjerke, 1989) or the strategic approach alone. Furthermore, previous research implied that pull-motivated entrepreneurs exhibit higher levels of venture growth and that this relationship may be reasonably linear. An exploratory study by Solymossy (1996) contradicted those assumptions. The limited inclusive and contradictory findings regarding the relationship between motivation and growth suggested a need for a more comprehensive examination.

The third stream of research, an organizational life cycle perspective, is based on the organizational stages of growth hypothesis (Greiner, 1978). Studies of entrepreneurial growth in this direction often apply a life-cycle analogy to organizations that assumes firms pass through a predictable sequence of stages as their product markets enlarge. For example, Churchill and Lewis (1983) and Scott and Bruce (1987) developed five stages of small business growth, including inception, survival, growth, expansion, and maturity. These studies are concerned either with the characteristics of entrepreneurial growth in various predetermined stages of growth or with validating the stages of growth model (Smith, Mitchell, and Summer 1985; Hanks, 1990). Because entrepreneurial growth may be neither orderly nor sequential, these studies, descriptive in nature, have limited value for generating guidelines for promoting entrepreneurial growth. One positive attribute of this

approach however, is that it recognizes entrepreneurship as a process.

One of the challenges associated with the study of business growth is the influence of multiple factors on the process. Schumpeter (1947) contendedthat economic growth is not an autonomous phenomenon that can be satisfactorily analyzed in purely economic terms. This agreement is based on the contention that multiple factors such as the physical infrastructure, social organization, politics, technology, national spirit, and human capital all influence economic growth.

Limitations of Previous Research

Our literature review suggests several major limitations of current research in the area of entrepreneurial expansion. First, simple treatment of entrepreneurial growth measures seriously hampers model predictability, which contributes to conflicting results among existing studies. Consistent with the assessment of Hoy, McDougall and Dsouza (1992), it was found that most studies define entrepreneurial growth as an one-dimensional construct operationalized by a variety of growth measures, ranging from increases in venture capital and market share to growth in sales revenue, accounting-based return on investment (ROI) and return on assets (ROA), and number of employees.

One major problem of these measures is that new business ventures oftentimes do not exhibit monotonic sales growth: single-year sales or employment growth figures may capture aberrations, thus not representing the true health of the firms. Conversely, if a researcher uses growth averages, such aggregated statistics again fail to capture complex growth patterns across time and may not accurately reflect the firm's current growth. Another problem for the accounting-based measures such as ROI and ROA is that data can be heavily influenced by decisions about the owner- manager's compensation and industry margins, as well as a host of other factors. The upshot of this variety of measures is that comparison across studies is difficult. That is one of the reasons that little cumulative research can be relied upon in this area.

Second, most studies measure growth as the "realized" growth, which may fail to capture entrepreneurial growth in resources base, technology improvement, and even market expansion. Entrepreneurial growth in those aspects would not necessarily be reflected in current sales or profit figures of a business venture. Whereas those measures may be "final outcomes," it is necessary to ask how the final objectives are achieved. In other words, a future perspective must be included in the measurement. Therefore, a set

of "implemental attributes" that are "intentions-based" is called for.

In reallity, researchers in the entrepreneurship area already notice that the lack of reliable, valid, and meaningful growth measures hampers researchers' effort (Brush and Vanderwerf, 1992; Chandler and Hanks, 1993). They criticize existing growth measures, lamenting the use of simple accounting-based measures that do not deftly fit the disjointed, discontinuous, and non-linear process of emerging businesses (Bygrave, 1989). Scholars appeal to researchers to use concepts, measures, and methods grounded in theory and knowledge of entrepreneurial phenomena and call for a contextual and process-oriented approach in developing measures (Low and MacMillan, 1988). Researchers view the development of reliable, valid, and meaningful growth measures as imperative if our efforts to explain and facilitate entrepreneurial growth are to succeed. Surprisingly, little effort has been devoted to this area.

The third, research concerning entrepreneurial growth has been very fragmented. Most studies so far have focused on the independent effect of the determinants of entrepreneurial growth, such as motivation, obstacles, and various strategies. Studies that compare and integrate both macro and micro predictors are largely missing.

Thus, our study of Bangladeshi entrepreneurs took a mid-range theorizing approach by focusing on the integration of macro-level infrastructure and micro-level motivational factors in predicting growth. The infrastructure variable was chosen because infrastructure factors can have a double effect on entrepreneurial growth. Infrastructure conditions can have great impact on the operation of business ventures that are already in operation. Within organizational research, the environment has often been viewed as the source of resources necessary for survival and growth (Dess and Beard, 1984; Pfeffer and Salancik, 1978). For example, business, informational, and financial services provided by government have been viewed as important factors in stimulating entrepreneurial growth. However, infrastructure conditions also affect new ventures' structure, processes, and strategies at the time of their founding.

The seminal work by Stinchcombe (1965), Tesfaye (1993) and Svedberg (2000) suggested that new firms are imprinted at the time of founding and the imprinting has lasting effects on subsequent strategy, structure, and performance owing to organizational inertia. The external control theorists suggested that organizations are im-printed by the environment at the time of founding in a way that has an impact

on their subsequent development and performance (Boeker, 1989; Stinchcombe, 1965). This approach suggests that the ability of the new venture to grow may be determined by the external contextual factors that are outside the control of the entrepreneur (Aldrich, 1990).

Accordingly, this study attempts to address the following two questions First, which is a more important predictor of entrepreneurial growth, the macro, external infrastructure factor or the micro, internal motivation factor? This research question is consistent with the deterministic vs. active argument in the tradition of strategy literature. Second, to what extent are the effects of entrepreneurial motives on growth moderated by the external infrastructure variables? This question challenges the widely held notion of the monotonic relationship between motivation and growth. It would be extremely interestingly to investigate the interaction effect between infrastructure and intrinsic "pull" motives and extrinsic push "motives."

Development of hypothesis

Consistent with our argument that multi-dimensional predictors are required to explain entrepreneurial growth, we have focused on the motivations of the entrepreneur at the micro level and infrastructure elements of the environment at the macro level as predictors. The "imprinting" argument by the deterministic theories suggests that entrepreneurial growth will be affected by the infrastructure factors. By contrast, micro behavior theorists have contended that entrepreneurs who are highly motivated either by intrinsic or extrinsic factors tend to work harder and be more persistent, and are therefore more successful than their less motivated counterparts. The question becomes which one of the predictors is stronger? The rationale that suggests that both the decision to start a business and the decision to grow a business emanate from similar sources indicates that entrepreneurship motives are quite strong – stronger than external factors that may change because of the whim of a politician or volatile market forces. This suggests that the "dream" an individual entrepreneur has is a more powerful predictor than the infrastructure component. On the bases of the foregoing argument, we hypothesize:

H1: Entrepreneurship motives, skills and opportunity are more strongly related to entrepreneurial growth than infrastructure predictors are.

The impacts of infrastructure and entrepreneurial motives on growth may

not be mutually exclusive. In order to investigate how the two predictors operate with each other, we raised the question of whether their inter action would enhance or diminish each. To get a more accurate handle on the operationalization of the motivational components, we categorized them into intrinsic pull factors and extrinsic push factors.

Under what conditions will the predictive power of intrinsic pull motivations be enhanced, and under what conditions will the extrinsic push motivations be enhanced? The resiliency of Bangladeshi entrepreneurs can not be underestimated; especially those intrinsically motivated who may count less on infrastructure support from the environment than those who are primarily extrinsically motivated.

We predicted that intrinsically motivated entrepreneurs would not allow various infrastructural factors to affect their expansion plans. This prediction is based on the belief that the infrastructural factors in Bangladesh have been poorly maintained and supported, resulting in low expectations by the intrinsically motivated entrepreneurs. They have come to rely more on themselves and not on external factors. They have more or less "insulate" themselves from disappointments resulting from the lack of infra structure services. We predicted that the extrinsically motivated entrepreneurs would have higher expectations from the infrastructure services, and the relationship of motivation to entrepreneurial growth might therefore be enhanced.

Consequently, we contended:

H2: In the relationship between motivation and entrepreneurial growth, the moderating effects of the infrastructure elements will be more positively enhanced

*by the intrinsic pull f*actors than by the extrinsic push factors.

Methodology & research design

Survey Instrument

A comprehensive Entrepreneur and Enterprise Profile Questionnaire was utilized as a data collection instrument. The questionnaire was designed to survey the effect of individual, societal, and environmental factors on entrepreneurial expansion plans. From an individual perspective, the most vital aspects of the entrepreneurs, including their attitudes, beliefs, motivations, and opinions were captured. The role of social groups, including the role and relationships of family and personal networks, was also revealed. The questionnaire allows for the capture of vital facts related to the socioeconomic environment factors, such as demographic information, as well as

the level and the type of environmental velocity found in society.

The questionnaire is a comprehensive ten page instrument that captures demo graphics of the business and founder, contextual and industry information, growth patterns, entrepreneurial intensity, opportunity costs entrepreneurs are willing to pay, motivations for going into business, categories of growth intentions, ultimate goal satisfaction, socialistic attitudes, anomie, types of financing, mentoring and networking patterns, and obstacles to entrepreneurial success.

The questionnaire was successfully pilot tested and validated through a series of studies in Sweden, Denmark, Thailand, Malaysia, India, and Bangladesh. The research involving the Bangladesh entrepreneurs is part of an ongoing cross-sectional program investigating factors affecting entrepreneurial expansion in transforming economies. The questionnaire was professionally translated and edited into English/Bengali, pre-tested, and then revised to clear up ambiguities or idiosyncratic terminology.

Method of Data Collection and Sampling Procedure

We drew a sample representing a cross section of new business ventures across a variety of geographic areas as well as industries. A cluster sampling technique was used to collect data from 5 urban centers throughout Bangladesh, including Dhaka, Chittagong, Rajshahi, Mymenshingh, Bogra, Rangpur. Business ventures were randomly selected from the client list of Bangladesh Small and Cottage Industries Corporation (BSCIC), as well as from local chambers of commerce private enterprise databases.

We chose personal interviews rather than a random survey as the primary method of data collection for the following reasons. First, in a transforming economy like Bangladesh's private business ventures are at the very early stage of development. We believe that an interview method greatly enhances the validity and reliability of the sample data. Second, the experience of Bangladeshi counterparts suggests a very low response rate for survey research. One Bangladeshi university, American International University-Bangladesh, School of Business – Dhaka (AIUB), and the Bangladesh Institute of Development Studies (BIDS), assisted the data collection process. Both AIUB and BIDS have a good network of contacts throughout Bangladesh. A team of four (3) Bangladeshi scholars was assembled from both institutions. The research team members were introduced to the questionnaire instrument and trained in the interview method. They were sent to each major urban center

to conduct interviews with entrepreneurs who had recently started their businesses (Khan 2004).

Factor Analysis of Independent and Dependent Variables

Entrepreneurial expansion plans; infrastructure, and motivation items were factor analyzed. The factor analysis produces a clear structure with items loading on the appropriate factors. With only a few items being deleted because of low or incorrect loading, results from the factor analysis of entrepreneurial growth revealed three factors – resource aggregation, market expansion, and technology improvement – that explain 60% of cumulative variance and demonstrate excellent validity (Table 1). Additionally, internal reliability tests showed strong Cronbach alphas ranging from 0.6744 to 0.8986.

Table 1. Factor Analysis of Entrepreneurial Expansion Plan.

Dimensions	**Factors**		
Computerizing current operations	**Resources Agreement**	**Marketing Expansion**	**Technology Improvement**
	.67562	.16080	.39686
Upgrading computer systems	.7516	.13081	.35209
Adding specialized employees	.50997	.28878	.39490
Redesigning layout	.70612	.15634	.20802
Offsite training of employees	.63702	.18472	.28599
Redesigning operating methods	.77669	.10429	.19011
Seeking additional financing	.68532	.20874	.04473
Seeking professional advice	.71995	.20976	.07246
Expanding scope of operating activities	.49574	.16172	.38090
Adding a new product or service	.00030	.70851	.11896
Selling to a new market	.25643	.71719	.00919
Adding operating space	.08556	.64224	.16052
Expanding distribution	.27710	.77900	.10915
Expanding advertising and promotion	.30434	.63887	.10803
Researching new markets	.32797	.49908	.05 801
Acquiring new equipment	.19302	.13472	.72805
Replacing present equipment	.3 9722	.09928	.65728
Expanding current facilities	.05007	.33438	.75644
Cronbacb alpha	.8986	.7879	.6744
Cumulative Variance explained by the three factors: 59.9%			

Factor analysis of one independent variable, infrastructure showed five dimensions – government assistance, business support service, physical facility, financial support, and informational services (Pistrui, Liao, and Welsch, 1999). In total, these factors accounted for 60.1% of the cumulative variance. Cronbach alphas for each of the factors ranged from 0.7034 to 0.8952, indicating excellent internal reliability (khan, 2004 and Tesfye, 1993).

Factor analysis of 37 motivation items yielded nine dimensions – communitarians, independence, fun and enjoyment, challenge, money, opportunity, escape, recognition, and family. The reliability of Cronbach alpha measures ranged from 0.6789 to 0.7723. These factors are highly consistent with similar studies by Scheinberg and McMillan (1988) and Blais et a!, (1990) that investigated 38 motivations for starting a business that were factor analyzed into nine factors. Three sub-factors were grouped together: independence, autonomy, and freedom to choose. The others included social recognition and approval, personal development and achievement, wealth, communitarians, escape, and opportunity.

For both dependent and independent variables, factor scores instead of sunimated scales were chosen and computed because of the desire for orthogonally of the measures in our subsequent multiple regression analysis.

Test of Model

Using a hierarchical regression model tested hypothesis 1. *First,* infrastructure factors were entered into the regression model as a block, followed by a block of motivation factors. The increment R-square for each block of variables was then computed, and a comparison was made to identify which category of factors explained more variance of each dimension of entrepreneurial growth. Clearly, the block of factors with high increment R-square is a clear indication of the importance of variables in predicting the dependent variable. Because we identified three dimensions of entrepreneurial growth, the hypotheses testing involves the following three multiple regression models.

Resource Aggression = [Variables] + [Variables]

Market Expansion = [Infrastructure Variables] + [Motivation Variables]

Technological Improvement [Infrastructure Variables] + [motivation Variables]

Second, we separated the motivational factors into intrinsic "pull" factors and extrinsic "pull" factors. A composite

score for the "pull" factor and the "push" factor was calculated. A series of regression models was then applied to test the interaction effects between infrastructure and each of the pull and push factors. The infrastructural components were reduced from five to three variables in order to simplify the analysis and reduce the large possible combinations. There were some questions about the origin and overlapping of information services and support services elements, so these items were dropped from the analysis. The remaining infrastructure elements include physical facilities, financial services, and government assistance.

Findings and Analysis

Are Motivations More Important than Infrastructure?

As indicated in Table 2, the total variance of each type of entrepreneurial growth explained by the motivational factors and infrastructure elements was significant. Infrastructure elements explained 24.27% of the variance and motivational factors accounted for 21.19% when entrepreneurs choose resource aggregation as a source of growth. By contrast, when market expansion was chosen as the mode of growth, motivational factors turned out be dominant predictors, accounting for 12.01% of the variance as com pared with as little as 3.4% for infrastructure. However, entrepreneurial growth by technological improvement is almost equally predicted by infrastructure elements (10.26%) and motivational factors (9.06%). Overall, the findings fail to support our first hypothesis that entrepreneurial motives are stronger predictors of entrepreneurial growth than infrastructure.

Table 2. Hierarchical Regression Model: Infrastructure Motivation Factors.

Block variables	Resource Aggregation		Market expansion		Technological Improvement	
	R-square	R-square change	R-square	R-square change	R-square	R-square change
Infrastructure	.2427	-	.034 -	-	1026	-
Motivation	.4546	.2119	.1505	.1201	.1933	.0906
F-change		13.082***		4.760***		3.7832***

*** Alpha <0.01

Our findings suggest that the impact of infrastructure and motivation on entrepreneurial growth differs depending on the dominant pattern of growth. Even though infrastructure and motivation are equally important for entrepreneurial growth through resource aggregation and technological improvement, motivations seem to be much stronger predictors of market expansion.

At the aggregate level, infrastructure and motivation accounted for 45.46% of the variance of resource aggregation, 15.05% for market expansion, and 19.33% for technological improvement. This indicates that in a transition economy like Bangladesh's, resource aggregation is still the dominant pattern of growth. Only highly motivated entrepreneurs are willing to take a riskier avenue of growth – market expansion. However, when entrepreneurial growth relies on technological improvement–riskier than market expansion – Bangladesh's as well as other surveyed countries' entrepreneurs seem to seek services from infrastructure to reduce risk. Even at the very early stage of entrepreneurship development, there is no indication that highly motivated entrepreneurs are bluntly looking for a risky venture without seeking information services, financial services, and government assistance.

Do Infrastructure Elements Moderate Motives and Growth Relation ship?

The results shown in Table 3 indicate both direct and interactive effects of motivation and infrastructure on each dimension of entrepreneurial growth.

Table 3. Interaction Effects between Infrastructure and Motivation.

Model	Resource Aggregation		Market Expansion		Technological Improvement	
	Beta	**t**	**Beta**	**t**	**Beta**	**t**
Constant		-.461		-.229		-.063
Pull motive	.192	3.592*0*	.106	1.867	.167	2.843*0*
Push motives	.245	4.874*0*	.154	2.886*0*	.089	1.617
Physical facilities	.073	1.387	-.252	.4,532*0*	.038	.659
Financial assistance	-.243	.4.818*0*	.120	.2382	.079	1.422
Government assistance	.074	-1.428	-.085	-1.546	-.113	.1.984*0
Pull * Physical facilities	.013	.243	-.001	-.025	.039	.696
Push * Physical facilities	-.128	2.478***	-.056	-1.021	-.087	-1.542
Pull * Financial service	.107	2.064*0*	-.045	-.809	.016	.272
Push Financial service	.017	.336	-.080	-1.477	-.074	-1.321
Pull Government assistance	091	1.7350*	.135	2.409	.021	.362
Push • Government assistance	.049	.946	-.037	-.679	-.003	-.055
R	.484		.307		.277	
R-square	.234		.137		.077	
Adjusted R-Square	.207		.106		.044	
F	8.513*0*		4.4240*0		2.3140*	

Motivation–Resource Aggregation. Although both intrinsic pull and extrinsic push factors are significant predictors of entrepreneurial growth through resource aggregation, the push motives (beta = 0.245) show a more important role than the pull motives (beta = 0.192). These finding are consistent with the situation in a transition economy like Bangladesh's. Unemployment, dissatisfaction with current jobs, and opportunities owing to the lack of established rules pushed individuals to be entrepreneurial.

The interaction effects between push motives and physical facilities were statistically negative, suggesting that the relationship between extrinsic motives and resource aggregation becomes weaker when physical facilities become more available. In other words, when physical facilities become less available, the influence of extrinsic motives on resource aggregation will be stronger. It may be that Bangladesh's entrepreneurs who were pushed into venturing a business owing to unemployment and other escape factors became more determined to seek growth, because they had nothing to lose. The lack of basic physical facilities did not become a preventive factor but a precipitating one. These findings provide further evidence of the resiliency and persistence of Bangladeshi entrepreneurs (Field Study, 2008).

We also found significant positive interaction effects between pull motives and financial services, and pull motives and government assistance. These findings suggest that the relationship between intrinsic motives and resource aggregation is stronger when the quality and availability of financial services and government assistance become higher, which is contradictory to our second hypothesis. It may be that intrinsically motivated entrepreneurs pay more attention to changes in their external environments. They are more willing to learn, be familiar with, and utilize various information services, financial services, and government assistance programs.

Motivation–Market Expansion: The relationship between motivation and market expansion further confirmed that extrinsic push factors were much stronger predictors than intrinsic motives. These findings indicate that the Bangladeshi entrepreneurs choose relatively riskier market expansion as the dominant growth venue not because they are looking for challenges and independence but because of other escape factors. The significant interactive effects between pull motives and government assistance demonstrate that intrinsically motivated entrepreneurs have greater market expansion intention when the quality and availability of government assistance improve.

Motivation-Technological Improvement: The significant positive relationship between pull motives and technology expansion suggests that only intrinsically motivated entrepreneurs have the capacity and strength to take a more risky growth approach – [1]technology improvement. By contrast, extrinsically motivated entrepreneurs confined themselves mostly to resource aggregation and market expansion.

Our results demonstrate that entrepreneurial growth varies with the nature of motives and infrastructure. However, it is important to note that the variations found tended not to be independent effects. Only when we examined the interaction among these variables did we begin to see how motives and infrastructure fit together to jointly influence entrepreneurial growth. The implications for policy makers is that both nascent/aspiring entrepreneurs need to be encouraged to start and grow businesses as well as insuring that business infrastructure elements are in place and operating effectively. Different entrepreneurs have different growth dimensions, so it is important to nurture both individual/personal elements as well as structural resources and programs.

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