Entrepreneurial Expansion Plans: An Empirical Investigation of Infrastructure Predictors

Jianwen Liao
Harold P. Welsch
David Pistrui

Entrepreneurship and the development of new business continue to be the forefront of socioeconomic development in virtually all economies today. Despite evidence of increasing research into entrepreneurial growth, the existing research is limited by the fact that most studies define entrepreneurial growth as a unidimensional construct and operationalize it as "realized" growth relying on financially based measures. Consequently, this article has two objectives: (1) to develop a set of accurate and comprehensive entrepreneurial growth measures; and (2) to test a series of hypotheses regarding precursors of growth intentions—more specifically, to what extent, infrastructure factors affect entrepreneurial growth intentions. These two questions were examined using Entrepreneurial Profile Questionnaire (EPQ) in the context of Romania.

Results from factor analysis revealed refined patterns of entrepreneurial growth, including resource aggregation, market expansion, and technological improvement. The relationships between infrastructure and entrepreneurial growth were tested using a multiple regression model. Overall, it was posited that infrastructure is positively related to entrepreneurial growth. However, in most of the cases, the opposite proved to be true. These findings suggest that the Romanian entrepreneurs would pursue expansion plans in spite of the obstacles thrown into their path. Perhaps they have already developed strategies about overcoming those obstacles and in that process have developed the strength, ingenuity, and confidence to grow their new business ventures. Perhaps the many years that Romanians were confronted with numerous political and economical obstacles have prepared them to be much more flexible and adaptive. These counter-intuitive findings reflect on the hardiness and perseverance of the Romanian entrepreneurs.

Entrepreneurship and small businesses have been designated as the "engines of growth" generating more new jobs than corporate America not only by the job creating phenomenon in the United States (Birch 1987) but also in developing and privatizing economies across the globe. Governments and policymakers have become keenly aware of the economic development benefits that are derived from the establishment and growth of entrepreneurial endeavors.

In recent years, enlightened public policy strategists have chosen entrepreneurship as the vehicle to grow their national economies and improve their citizens' quality of life. One socialistic/centrally planned economy after another have folded their tents and adopted a free enterprise system, including China, India, South Africa, and Indonesia (Koveos and Tang 2007). Small business growth is emerging as a global phenomenon.

The collapse of the former Soviet bloc combined with an increasingly globalized economy has allowed the entrepreneurial driven small business to become a dynamic impetus of economic growth and progress. New ventures are forming at unparalleled rates, and the spirit that infuses them is reshaping economies around the world (Byrne 1993).

Carland et al. (1984) suggested that planned growth is an important method of differentiating entrepreneurs from small business owners. Their approach may actually provide a map through the maze, helping to uncover the essence of entrepreneurship. From their perspective, planned growth is seen as the variable that distinguishes small business owners who are often satisfied with the status quo (nongrowth oriented) from "real entrepreneurs." Presently there is a general lack of understanding of how entrepreneurial growth intentions and expansion plans evolve and take shape. From an extensive review of the literature, few comprehensive theoretical models exist to help explain the processes or probe the influences associated with planned growth intentions.

Surprisingly, little theoretical, quantitative, and rigorous literature focuses on decisions of entrepreneurs to develop their firms (Ward 1993). One of the fundamental problems at hand is how entrepreneurial growth is defined. Brush et al. (2008) suggest that "often there is no consensus on definition so disagreements arise because of scholars' roots in different disciplinary areas" (249). It is not necessarily limited to historical measures of sales, number of personnel, or profitability. New conceptual approaches focusing on growth intentions and enterprise expansion can also supplement historical theories. Entrepreneurial aspirations, willingness, intentions, motives, and expansion plans can be put forth to complement existing theories that describe small business growth via increases in sales, employees or profits.

Dunkelberg and Cooper (1982) have also argued that growth intention in and of itself, represents an important entrepreneurial characteristic. Other researchers have found entrepreneurial growth intention to be a key determinant of small firm growth. Birch (1987) argued that attitude rather than sector or location determines growth and success. Brown (1995) suggested that entrepreneurial growth intention had a positive impact on small firm growth. Wiklund and Shephard (2003) researched the relationship between growth aspirations and actual growth finding confirmation. Similarly Gundry and Welsch (2001) found that entrepreneurs with higher growth intentions actually grew faster. The expectancy theory (Vroom 1964) suggests that entrepreneurs will choose to grow their ventures if they believe their efforts will result in new venture growth. This is especially true if they have specific growth plans first introduced by Pistrui et al. (1997) as "implementable attributes of planned growth (IAPG) which identify nineteen specific growth behaviors." This latter relationship is based on the principle of "instrumentality" (Manolova et al. 2007), which refers to the link between performance and specific desired outcome. While many entrepreneurship researchers believe that growth is as much a matter of attitude as it is of economic aggregates (Fox 1996), little evidence exists supporting either argument (Wicklund et al. 2003).

With entrepreneurs seen as the "engineers" of the engine of growth, the field calls for research investigating their behavior and examining how the growth process operates. In essence, the process starts with a vision, a plan, and an intention to undertake expansion initiatives in their entrepreneurial endeavor. In fact, Carland et al. (1984) have distinguished "real entrepreneurs" who have greater expansion plans and initiatives, from small business owners who are satisfied with either the status quo or lower growth rates. It is the rapidly growing "gazelles" (Birch 1987) that actually provide the majority of economic growth and the creation of most of the new jobs.

Entrepreneurial visions must be transformed into intentions, which in turn are the precursors of start-up behavior. Therefore, as researchers it behooves us to establish and measure accurate growth intentions and identify predictors which enhance or detract from these expansion initiatives. Thus, this article has two objectives: (1) to identify a set of accurate and comprehensive growth intention measures representing actual decisions, and (2) to test a series of hypotheses regarding precursors of growth intentions. More specifically, it examines how the infrastructure factors affect entrepreneurial growth intention.

The area of growth intentions promises to be a rich mine of explaining economic behavior since it captures the essence of entrepreneurship (Busenitz et al. 2006). Very little research has been completed in this arena since economists have regarded the precursors of economic growth too behavioral and ill defined for their econometric models. If a preliminary model based on infrastructure relationships can be developed, more elaborate predictors can be added to help explain this economic phenomenon.

Literature Review

Different Streams of Research in Entrepreneurial Growth

Organization scholars have increasingly recognized the importance of the research of new venture (Eisenhardt and Shoonhoven 1990). Indeed, entrepreneurial growth has been seen as a valuable source of administrative and technological innovation, job creation (Birley 1986), and the competitive disciplining of industries (Scherer and Ross 1990). However, a coherent theory of entrepreneurial growth is lacking (Ardishrioloi et al. 1998), despite a series of micro (behavioral) and macro (strategic) perspectives.

There are several streams of research in the areas of entrepreneurial growth. The first stream, 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 between these variables influence entrepreneurial growth. Studies in this direction are mainly concerned with the predictors such as industry categories (Hay and Ross 1989), entry barriers (McDougall and Robinson 1988), environmental munificence and dynamism (Covin and Covin 1989), competitive strategy and structure (Covin and Slevin 1990), and the interaction between structural, cultural, and environmental factors (Fombrun and Wally 1989). For example, Cragg and King (1988) evaluated the relationship between a wide range of planning activities in small firms and various performance measures. Covin and Slevin (1989) found a systematic relationship between managerial orientation, strategic posture, and firm performance under different environmental contexts.

Related research in this area focuses both on the initial originating conditions of new ventures as well as the process of origination on their subsequent growth. For example, Duchesneau and Gartner (1988) found that emphasis on a number of formal planning models, including assessing the market, considering a number of functional areas, and devoting more time to planning, were all related to entrepreneurial growth. Research in this direction confirmed that networks may impact not only the process of origination, but also 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 resource. Studies in this direction are mainly concerned with the influence of the amount of initial capital and the sources of the capital on subsequent entrepreneurial

growth (Ahlstrom et al. 2004; Bruno and Tyebjee 1984; Dunkelberg et al. 1988).

While research in this direction illuminates the usefulness of certain activities and strategies in relation to entrepreneurial growth, they fall short in providing policy guidelines regarding how to promote entrepreneurial growth at the macro, or policy level.

The second stream of research, an organizational life cycle perspective, is based on the organizational stages of the growth hypothesis (Greiner 1972). These studies of entrepreneurial growth 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, Scott and Bruce (1987) and Churchill and Lewis (1983) developed five stages of small business growth, including inception, survival, growth, expansion, and maturity. More recently (Chadha 2007) developed a model with four stages: exploration, launch, growth, and evolution. Studies are concerned either with the characteristics of entrepreneurial growth in various predetermined stages of growth, or with validating the stages of growth model. Because entrepreneurial growth may be neither orderly nor sequential, these studies, descriptive in nature, are also limited in generating guidelines for promoting entrepreneurial growth.

The third 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, motivation, etc. 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. Individuals' breadth of experience, functional experience, and management experience tend to be viewed as one of the major predictors of entrepreneurial growth (Davidsson 1991). The literature on the psychological characteristics of entrepreneurs demonstrates the diversity of approaches used by different researchers. In their literature review, Cooper et al. (1994) found that 31 different attributes such as sacrifice, motivation, intensity, and risk-taking behavior have been investigated for their relationship to entrepreneurial growth. Overall, research findings in this direction have been extremely inconsistent and contradictory, especially most of those studies narrowly focusing on the independent effect of the psychological make-up of entrepreneurs. More recently, Baum and Locke (2004) found that performance was related to goal setting, self-efficacy, and communicating vision.

Theoretical Limitations

Our literature reviews suggest several major limitations of current research in entrepreneurial expansion. First, simple treatment of entrepreneurial growth measures seriously hampers model predictability, which contributes to conflicting results across existing studies. Consistent with the assessment of Hoy et al. (1992), we found that most studies define entrepreneurial growth as a unidimensional 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), or number of employees. One major problem of these measures is that new business ventures oftentimes do not exhibit monotonic sales growth. Therefore single-year sales or employment growth figures may capture aberrations 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 with the financially based measures such as ROI and ROA, is that the data can be heavily influenced by decisions about owner-manager's compensation as well as industry margins. The upshot of this variety of measures is that comparability across studies is difficult. This is one of the reasons that little cumulative research can be identified in this area. Since longitudinal studies are often not possible, concurrent measures of growth intentions may more accurately reflect the near terms operational behavior of the firm.

Secondly, most studies measure "realized" growth, which may fail to capture entrepreneurial growth in resources bases, technology improvement, and even market expansion. Entrepreneurial growth in these aspects would not necessarily be reflected in current sales or profit figures of a business venture. Whereas these measures may be "final outcomes," it is necessary to ask the question about how these final objectives are achieved. A set of "implementable attributes," which are "intentions-based" measures, are called for. Bringing growth intentions down to a set of actual decisions with a timetable for implementation is viewed as being both realistic and timely.

In fact, researchers in the entrepreneurship arena already took note of the lack of reliable, valid, and meaningful growth measures hampering researchers' effort (Chandler and Hanks 1993). Block and Wagner (2006) found that performance was affected by how the entrepreneur came into his or her profession, such as by necessity or by opportunity. Since the literature does not categorize growth performance by motives, little faith can be placed on its measurement. Bygrave (1989a,b) criticized existing growth measures, lamenting the use of simple accounting-based measures that do not deftly fit "disjointed, discontinuous, and the non-linear process" of emerging businesses. Low and MacMillan (1988) also appealed to researchers to use concepts, measures, and methods grounded in theory and knowledge of entrepreneurial phenomena and called for a

contextual and process-oriented approach in developing measures. They viewed the development of reliable, valid, and meaningful growth measures as imperative to explaining and facilitating entrepreneurial growth. Surprisingly, little effort has been devoted to this directive so far.

Thirdly, the essential question of the extent to which infrastructure impacts entrepreneurial growth remains largely unanswered. This question is not quite as simple as it might appear, since we are interested in the impact of a wide range of infrastructure elements on entrepreneurial growth. Accepting the view of entrepreneurial growth as a multidimensional construct, we might expect some variance in the impact of different infrastructure conditions on various dimensions of entrepreneurial growth. A key research question should be: Are certain elements of infrastructure more relevant to certain types of entrepreneurial growth? Or, are other infrastructure elements less critical to certain types of entrepreneurial growth? What combination(s) of infrastructure element would maximize the potential of entrepreneurial growth? The answers to these questions will also have important strategic implications for policymakers formulating different infrastructure strategies to foster entrepreneurial growth. Research in this direction would also fill several gaps of the entrepreneurship literature and enhance our understanding of the role of macro, contextual factors in entrepreneurial growth.

Consequently, this study attempts to address the following two questions. First, what are the different dimensions of entrepreneurial growth? And secondly, to what extent, are the different dimensions of entrepreneurial growth affected by infrastructure factors. This question has been recently investigated in China (Ahlstrom et al. 2004) and Turkey (Kozan et al. 2006). It is of particular interest to policymakers in developing countries moving to a free enterprise economy.

Research Model and Hypothesis Development

Infrastructure and Entrepreneurial Growth

Theoretically, there are two sources where infrastructure factors can affect entrepreneurial growth. On the one hand, infrastructure conditions can have great impact on the functioning 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 the government have been viewed as important factors in stimulating entrepreneurial growth. On the other hand, infrastructure conditions will also affect the new ventures' structure, processes, and strategies at the time of their founding. The population ecologists argue that new firms are imprinted at the time of founding and this imprinting has lasting effects on subsequent strategy, structure, and performance due to organizational inertia. The external control theorists suggest that organizations are imprinted by the environment at the time of founding in a manner that impacts their subsequent development and performance. This approach suggests that the ability of the new venture for growth may be determined by the external contextual factors that are outside the control of the entrepreneur (Aldrich 1990). Surprisingly, the effect of infrastructure on entrepreneurial growth, as a source of resource and environment imprints, has received little empirical attention so far.

Hypothesis Development

Entrepreneurial growth and development is affected by a myriad set of variables. One set of variables included in many predictive models are those based on the individual entrepreneur and his or her personal characteristics, such as personal drive, creativity, or initiative. However, individual personal characteristics are by themselves not strong enough predictors when they get swept away by macroeconomic forces (such as inflation or lack financing) or political forces (such as socialism or corruption/bureaucracy).

The research reported here focuses on a more "macro" approach, incorporating "infrastructure" variables as predictors of entrepreneurial expansion. Administrators of transition economies such as Romania are anxious to find "what works" and should be willing to provide various types of infrastructural support to encourage entrepreneurial growth. In their experimentation process, they will vary the amount and proportion of public resources available in fine-tuning the national allocation to achieve an optimum balance. Public policy therefore focuses on such important infrastructure programs as providing government assistance and business support services. Other "durable" or "hard goods" are adequate physical facilities and financial support. "Softer" elements such as the backing and support from harmonious family relationships also play an important role in encouraging entrepreneurial expansion. Another set of predictors includes informational services that provide entrepreneurs the knowledge to grow and expand. Each item alone is an important predictor, but taken together, they could provide an important policy thrust to encourage entrepreneurial expansion.

Government Assistance. Government agencies and programs such as the Small Business Administration (SBA) and the Small Business Development Center (SBDC) program in the United States are two good examples of how government can encourage small business expansion. It is often to the government's economic advantage to grow businesses thereby increasing their tax base and revenues. It also adds to the general well-being and quality of life of its citizens ("It's the economy, stupid!") which enhances politicians' election potential.

Hypothesis 1: The greater the government small business assistance, the greater the entrepreneurial expansion plans.

Business Support Services. Entrepreneurs alone cannot carry out complex expansion plans without some support from professional business services. They help shine the way along the path of risk and uncertainty. They encourage, answer difficult questions, conduct research, and provide professional advice. Their guidance, reasoned input, and past experience across various industries help focus the vision of the entrepreneur to expand his or her business.

Hypothesis 2: The greater the use of business support services, the greater the entrepreneurial expansion plans.

Family-Business Harmony. A family locked in conflict, pulling the wagon in several different directions, cannot hope to effectively expand its business. As in any complex undertaking, the concerted effort of every family member is required to pull off a common effort that external forces (competitors, competing projects) attempt to thwart. Sacrifices, moral support, encouragement, and family resources are required to complete the complex process of business growth.

Hypothesis 3: The greater the family business harmony, the greater the entrepreneurial expansion plans.

Physical Facilities. For growth activity to happen, it must be housed in a physical location that allows for expansion and flexibility. Warehouses, distribution facilities, factories, retail locations, manufacturing sites with offices, and managerial/technical staff are required. The existence of these physical facilities implies that they are sturdy, up-to-date, and secure to survive the wear and tear that invariably occurs during expansion stages.

Hypothesis 4: The greater the availability of physical facilities, the greater the entrepreneurial expansion plans.

Financial Support. Although barter exists as a medium of exchange in Romania, it is increasingly relying on financial resources for its expansion plans. Whether it is from foreign investment, government supported banks, family savings, joint ventures, or silent partners, Romanian businesses are becoming more Westernized with respect to their financing mechanisms. Creative and unusual methods of financing have come into play in expanding their business.

Hypothesis 5: The greater the availability of financial support, the greater the entrepreneurial expansion plans.

Informational Services. In the age of uncertainty and turmoil during the transition economy stages, it is increasingly important to provide accurate information for expansion planning. Information is essential to allow entrepreneurs to make aggressive leaps across the chasms of the future rather than short, incremental steps. Information is the trusted resource that allows for the building of bridges to the future. Libraries, universities, consultants, government offices, suppliers, and even family and friends contribute to the pool of knowledge that allows the entrepreneur to apply it to the design of growth strategies.

Hypothesis 6: The greater the availability of information services, the greater the entrepreneurial expansion plans.

Based on the rationale of these arguments and the previous literature, it is predicted that these six variables will explain a significant proportion of the variance in expansion plan endeavors. It is anticipated that the effects of these are cumulative, and work in concert to move the economy forward. It is also recognized that infrastructure alone is not the sole answer to explain why entrepreneurs grow their business, but it is an important, major set of elements that when taken together, contribute significantly to unraveling the mystery and filling in the gaps in our knowledge.

Research Design

Survey Instrument

The Entrepreneurial Profile Questionnaire (EPQ) was utilized as the data collection instrument. The EPQ 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 entrepreneur including his or her attitudes, beliefs, motivations, and opinions were captured. The role of social groups including the relationships of family and personal networks was also captured. The EPQ allows for the measurement of vital facts related to socioeconomic environment factors such as demographic information as well as the level and the type of environmental velocity found in society.

The EPQ was successfully piloted and validated through a series of studies in Russia, Poland, the Czech Republic, Hungary, Lithuania, Estonia as well as South Africa, Mexico, and the United States. The EPQ is an established research instrument which includes demographic, financing, motives, sacrifices, commitment, obstacles, information sources, and implementable attributes of planned growth among other

variables (Kozan et al. 2006; Liao et al. 2001; Pistrui et al. 2000; Pistrui et al. 1997; Welsch and Roberts 1994; Young and Welsch 1993) and has been adopted and administered in more than two dozen field sites/countries with documented validity and reliability. The research of the Romanian entrepreneurs is part of an ongoing cross-sectional project of investigating factors affecting entrepreneurial expansion in transforming economies. The EPQ was professionally translated and edited into Romanian, pretested, and then retranslated to clear up ambiguities or idiosyncratic terminology.

Operationalization of Entrepreneurial Growth: The Dependent Variable

Questionnaire items were constructed based on how an entrepreneur actually thinks and behaves. His or her intentions to grow the business are actually implemented through a wide range of actions and decisions within the working environment. By probing through interviews and having these decisions enunciated, the research team was able to construct the items and processes in which entrepreneurs actually engaged. Respondents were identified in nine cities through registrations with chambers of commerce. Because of difficulties anticipated regarding low response rates and the postal system, it was decided to personally interview, provide orientation, and administer the EPQ. This assured researchers a completed instrument based on clarifications provided to the respondents by a trained researcher. These growth items were actually condensed and summarized from a wider range of behaviors. Eighteen items were identified as representing a fairly comprehensive collection of decisions that entrepreneurs actually implemented. A series of complementary studies in different cultural/geographic settings confirmed the accuracy of these measures. These sites included Russia, Hungary, Poland, Estonia, Lithuania, Mexico, East Germany, and India. Entrepreneurial growth included the following dimensions:

- Computerizing current operations
- Upgrading computer systems
- Adding specialized employees
- Redesigning layout
- Offsite training of employees
- Redesigning operating methods
- Seeking additional financing
- Seeking professional advice
- Expanding scope of operating activities
- Adding a new product or service
- Selling to a new market
- Adding operating space
- Expanding distribution
- Expanding advertising and promotion
- Researching new markets
- Acquiring new equipment
- Replacing present equipment
- Expanding current facilities

Research Site: Romania's Privatizing Economy

To find a research site where the infrastructure of the economy was not yet fully developed, Romania was chosen since infrastructural elements of its privatizing economy where only yet evolving and had not yet been finalized. The research approach in this manner allowed new entrepreneurs to experience deficiencies that would be identified as lacking, as well as report those elements that were operating satisfactorily. Thus, the set of independent variables would have a wider distribution than say a fully developed economy with a more complete infrastructure in place. Romania provided the perfect regional context wherein entrepreneurs emerge, innovate, and establish new economic activities that drive economic growth.

A major assumption of the present research is that one of the greatest obstacles prohibiting the growth of entrepreneurship and private enterprise is an inadequate infrastructure. Romania's transportation, communication, and lagging financial institutions made private sector enterprise development difficult. Although some post-depression legislation supported entrepreneurship, the emerging nationalistic-fascist movement during the same period favored state control of enterprise (Pistrui 1999).

During the latter years of Communism, the state controlled in excess of 90 percent of the economic resources in Romania. The centralized state control continued to invest in heavy industry at the expense of consumer goods and agriculture. The country's infrastructure continued to lag behind what was required. The only sign of entrepreneurship appeared during the early days of the Ceausescu era in 1967 when the state permitted some private shops, restaurants, and boarding houses. This was short lived and a pacifying ploy aimed at both the West and the Romanian people themselves.

Romania and the emerging markets of the former Soviet bloc are rich in opportunity, but also, because of the political instability associated with transition, extremely volatile and risky. The lack of managerial training and competent employees seem to act as barriers to entrepreneurial growth and development. However, technical assistance, market information, legal services, transportation, and banking services seem to be making some headway in supporting the privatizing economic sector.

Thus, some infrastructural elements are being put in place, while others are still missing. There are many lessons to be learned in Romania as to which of these services are providing the most opportunity for entrepreneurs to develop

their business. The goal of this research is to identify and document which of these elements (if any) enable entrepreneurs to move forward in Romania.

Data Collection and Sampling Procedure

A sample representing wide selection of new business ventures across a variety of geographic areas as well as industries was taken. A cluster sampling technique was utilized to collect data from eight urban centers throughout Romania, including Bucharest Brosov, Timisoara, Cluj-Napoca, Contanta, Arad, Craiova, and Galati. Business ventures were randomly selected from the client list of Romanian Small Business Development Center (SBDC) as well as from the local chamber of commerce private enterprise databases.

Personal interviews rather than random survey as the primary method of data collection was chosen for the following reasons. First, in a transforming economy like Romania, private business ventures are at the very early stage of development. In this situation, the interview method enhances the validity and reliability of the sample data. Secondly, the experience of Romanian research counterparts suggested a very low response rate for survey research. Two Romanian universities, the Academy of Economic Studies–Bucharest (ASE) and the Polytechnic University of Bucharest (PUB), assisted in the data collection process. Both ASE and PUB have an excellent network of contacts throughout Romania. A team of 30 Romanian scholars was assembled from both institutions. The research team members were familiarized with the EPQ and trained in the interview method. They were sent to each major urban center to conduct interviews with entrepreneurs who recently started their businesses. A total of 405 filled questionnaires was returned.

Test of Sample Randomness by Different Industrial Groups

One question that arises from the interview data collection approach is whether there is a random sample and to what extent the empirical findings from our research can be generalized to the population level. ANOVA was used to test if there was any sample bias in the convenience sample. As indicated in Table 1, the sample was grouped by different industries, which is the categorical variable in our model and company size measured by the number of employees as the dependent variable.

The ANOVA tests indicate that the group variable, industrial classification, is not a predictor of firm size, suggesting that we have a fairly reasonable unbiased sample even though a random procedure was not used in the sampling process.

Validation of Measurement: Factor Analysis

Both entrepreneurial expansion plan and infrastructure 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 reveal three factors—resource aggregation, market expansion, and technology improvement—which explain 60 percent of cumulative variance and demonstrate excellent validity (Table 2). Additionally, internal reliability tests showed strong Cronbach alphas ranging from 0.6744 to .8986.

Table 1. ANOVA: Industrial Classifications as Categorical Variable and Size of Company by Number of Employees as Dependent Variable

Source of Variation	*Sum of Squares*	*Degree of Freedom*	*Mean Square*	*F*	*Sig. Of F*
Main effect					
Size of company	5199.907	8	649.988	1.528	0.147
Explained	5199.907	8	649.988	1.528	0.147
Residue	115736.449	272	425.502	1.528	0.147
Total	120936.356	280	431.916		

Factor analysis of the independent variable, infrastructure, unveils six dimensions, including government assistance, business support services, family-business harmony, physical facilities, financial support, and informational services (Table 3). In total, these factors account for 60.1 percent of cumulative variance. Cronbach alphas for each of the factors ranged from 0.7034 to 0.8952, indicating excellent internal reliability.

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

Method of Testing

The proposed hypotheses were tested using multiple regression models as indicated below. These regression models tested to what extent the six infrastructure dimensions affect entrepreneurial expansion, including resource aggregation, market expansion, and technology improvement. The standardized b_i would indicate the relative importance of each factor in determining the entrepreneurial growth.

(1) Resource aggregation = a + b1 * Business support service + b2 * Family and business harmony + b3 * Financial support + b4 * Government support + b5 * Informational service + b6 * Physical facility + e

(2) Market expansion = a + b1 * Business support service + b2 * Family and business harmony + b3 * Financial support + b4 * Government support + b5 * Informational service + b6 * Physical facility + e

Table 2. Factor Analysis of Entrepreneurial Expansion Plan			
Dimensions	*Factors*		
	Resources Aggregation	*Marketing Expansion*	*Technology Improvement*
Computerizing current operations	**.67562**	.16080	.39686
Upgrading computer systems	**.75169**	.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**	.05801
Acquiring new equipment	.19302	.13472	.72805
Replace present equipment	.39722	-.09928	**.65728**
Expand current facilities	.05007	.33438	**.75644**
Cronbach α	**.8986**	**.7879**	**.6744**
Cumulative variance explained by the three factors: 59.9%			

(3) Technological improvement = a + b1 * Business support service + b2 * Family and business harmony + b3 * Financial support + b4 * Government support + b5 * Informational service + b6 * Physical facility + e

Results and Discussion

The results of the regression analysis are summarized in Table 4 and Figure 1. Overall, all regression models are statistically significant. The six dimensions of infrastructure explained 43 percent of total variance of entrepreneurial expansion. However, there is significant disparity of the R square for each model. More specifically, infrastructure accounted for 26.9 percent of the variance of growth through resource aggregation, 11.46 percent for growth through market expansion, and 4.62 percent for technology improvement. This suggested that in a transition economy like Romania the impact of infrastructure on market expansion and technology improvement is limited. It is resource aggregation that is the dominant source of entrepreneurial growth (Figure 2).

At this stage of Romanian entrepreneurial development, policymakers need to focus on infrastructure resources that will facilitate resources aggregation and reconfiguration, rather than target technology improvement. Therefore, policymakers need to take into consideration the existing dominant pattern of the current stage of entrepreneurial growth as they select the combination of infrastructure resources that can be offered to entrepreneurs.

Results from Model I (Table 4) indicate that business service and financial support have significant negative impact on resource aggregation in Romania, contrary to our hypothesized directions (H1, H4). Findings from Model I also demonstrate that information service is positively associated with resource aggregation, consistent with our hypothesis. The impact of family-business harmony on resource aggregation is positive as predicted, but statistically insignificant. To our surprise, government support has a negative impact on the resource aggregation of Romanian entrepreneurs, even though the impact is statistically insignificant. These findings suggest that Romanian entrepreneurs continue to expand despite the lack of business services and financial support. They tend to find innovative ways to deal with the unavailability of business service and financial support. Nevertheless, information services provided by the Romanian government do play an important role in resource aggregation. In a transition economy like Romania, the government information service is the primary source of information which entrepreneurs rely on to optimize the utilization of their resources.

Results from Model II show three infrastructure factors—business services, government support, and information

Table 3. Factor Analysis of Infrastructure Obstacles

Dimensions	*Factors*					
	Business Service	*Government Support*	*Financial Support*	*Family and Business Harmony*	*Physical Facilities*	*Informational Service*
Lack of distribution channels	**0.4364**	0.2273	0.4117	0.0970	0.2387	0.0510
Lack of market information	**0.6496**	0.2329	0.0060	0.0512	0.1540	0.3424
Lack of sources of technical assistance	**0.7358**	0.1074	0.1300	0.0626	0.1591	0.1687
Lack of managerial services	**0.8201**	0.1767	0.0769	0.1062	0.0810	0.1308
Lack of employees trained in financial affairs	**0.7527**	0.1749	0.2155	0.1945	-0.1158	-0.0865
Lack of employees trained in marketing	**0.8114**	0.1455	0.1294	0.1271	-0.0180	0.0268
Lack of legal services	**0.5434**	0.3961	0.3845	0.1477	0.0029	0.0739
Lack of international trading information	**0.7344**	0.1583	0.0807	0.0029	0.1385	0.1736
Lack of clear regulations re. Private entrepreneurship	0.2100	**0.5447**	0.2428	-0.1711	0.1988	0.3322
Negative attitude toward profit making	0.2358	**0.4697**	0.4279	0.1888	0.0696	-0.0169
Corruption	0.1389	**0.6289**	0.3105	-0.0328	0.0469	0.1462
Anti-market attitudes and behavior by government	0.0890	**0.7697**	0.2415	0.1015	0.0155	-0.0184
Government assistance agencies	0.2936	**0.5012**	0.3043	0.1407	0.0268	-0.1364
Bureaucratic red tape	0.2685	**0.6893**	-0.0436	0.0887	0.2966	0.1184
Roads	0.1971	**0.6697**	-0.1861	0.2384	0.2007	-0.0216
Lack of security	0.2933	**0.5093**	0.3430	0.1904	-0.0032	0.0222
Obtaining a loan	0.1401	0.1431	**0.6217**	0.0680	0.4334	0.0686
Extension of credit form suppliers	0.0913	0.0447	**0.5891**	0.2608	0.0097	0.0932
Lack of access to capital	0.1452	0.2308	**0.6098**	-0.0770	0.1644	0.2993
Scheduling business and family activities	0.1005	-0.0239	0.1857	**0.6604**	0.1001	0.0666
Fatigue from long hours	0.0772	0.0610	0.1641	**0.6841**	0.0587	0.0640
Bearing the entire risk of start-up	0.0041	0.1143	-0.1602	**0.6685**	0.0884	0.2202
Finding enough time to spend with my children	0.1137	0.0212	0.2549	**0.6263**	-0.1377	0.0987
Finding a good location	-0.0031	0.1008	0.0975	0.0522	**0.8200**	0.0248
Storage/warehouses	0.3021	0.3812	0.0608	0.2475	**0.4621**	-0.0679
Construction costs	0.2069	0.2045	0.3806	0.0115	**0.5374**	-0.0829
Lack of guidance and counsel	0.1967	0.0235	0.1074	0.3202	-0.1105	**0.7462**
Lack of knowledge of relevant information sources	0.2491	0.0780	0.1332	0.2170	0.0254	**0.7937**
Cronbach α	**0.8952**	**0.8521**	**0.7034**	**0.7125**	**0.8149**	**0.7176**
Cumulative Variance explained by the six factors: 60.1%						

services—are all negatively related to market expansion, contradictory to our hypotheses. Consistent with our prediction, market expansion is positively affected by physical facilities. The findings suggest several interesting observations. First, Romanian entrepreneurs did not rely on the government's business services, support, and information services to seek market expansion. Second, because the dominant growth pattern of Romanian entrepreneurs is resource aggregation, only a small number of Romanian entrepreneurs realized the importance of intangible resources such as information and business service in market expansion. It is no surprise that they tend to focus on tangible factors such as physical facilities. These findings shed additional light on the assessment of the growth pattern of Romanian entrepreneurs. Third, Romanian entrepreneurial growth in term of market expansion is not hampered by the lack of legal services, lack of technical assistance or lack of information services. In another words, Romanian entrepreneurs commit to market growth despite the obstacles in the business and information service area.

Results from Model III indicate that growth through technology improvement is positively affected by business-family harmony and information services, and again negatively related to government support. These findings suggest the following. First, family support is critical because growth through technology improvement is riskier than other growth alternatives such as resources aggregation and market expansion. Lack of basic business services and a shortage of venture cap-

Table 4. Summary of Regression Analysis

Models (dependent Variables)	*Model I*		*Model II*		*Model III*	
	Resources Aggregation		*Market Expansion*		*Technological Improvement*	
	bi	*T*	*bi*	*T*	*bi*	*T*
Independent Variables						
Business Service	-.4056	-8.682***	-.1680	-3.251***	-.0090	-.172
Family-Business Harmony	.0435	.922	.0420	.804	.1161	2.191**
Financial Support	-.2817	-5.960***	.0759	1.452	.0461	.868
Government Support	-.0116	-.251	-.1032	-2.023**	-.1310	-2.532**
Informational Service	.1416	3.039***	-.2438	-4.729***	.1074	2.053**
Physical Facilities	.0643	1.345	.0991	1.875*	-.0356	-.664
Multiple R	.5186		.3385		0.2149	
R Square	.2690		.1146		0.0462	
Adjusted R Square	.2561		.009		0.0294	
F	20.9064***		7.3553***		2.7506**	

*a=0.1
**a=0.05
***a=0.01

ital in a transition economy require Romanian entrepreneurs to rely on the first and last resort—their family—for physical, financial, and emotional support. Second, Romanian entrepreneurs who relied on technology improvement as source of growth indeed recognized the importance of information services.

The impacts of financial support on market expansion and technological improvement are positive, but statistically insignificant. Surprisingly, we found that resource aggregation is negatively affected by financial support. These findings suggest that entrepreneurial growth in the form of market expansion and technological improvement would not necessarily have to rely on financial support. On the contrary, lack of financial support leads entrepreneurs to rely on expansion through reconfiguring existing resource bases.

The results in Table 4 also demonstrate the overall negativity of entrepreneurs toward government support and business service. In all growth models—resource aggregation (I), market expansion (II), technology improvement (III)—Romanian entrepreneurs regard government support and business service as negative factors, rather than positive factors as mainstream theories would predict. Such negativity can be easily explained by the negative experience that Romanian entrepreneurs had in the past under the Ceaucescu's heavy-handed, central-planned economy. To a certain extent, they equate government intervention with government support.

The results also highlight the importance of family-business harmony in the entrepreneurial growth of Romania. In all three growth models, family-business harmony is positively related to technology improvement, resource configuration, and market expansion, despite that their impacts on the latter two are moderate and statistically insignificant. Nevertheless, it implies that family support is critical when a riskier expansion strategy like technology improvement is chosen.

Overall, infrastructure factors were hypothesized to be positively related to entrepreneurial expansion. However, in 6 of 10 cases, the opposite proved to be true. These findings suggest that Romanian entrepreneurs would pursue expansion plans in spite of the obstacles thrown into their path. Perhaps they have already developed strategies about overcoming those obstacles and in that process have developed the strength, ingenuity, and confidence to grow their new business ventures. Perhaps the many years that Romanians were confronted with numerous political and economical obstacles, have forced them to become more resourceful, flexible, and adaptive. This counterintuitive finding reflects on the hardiness and perseverance of the Romanian entrepreneur.

Conclusions

The findings reported here have important implications for policy-makers. Entrepreneurs may not necessarily pursue the three elements of growth and expansion in the same proportion as advocated by government directives. Also, government officials may not realize that economic growth and expansion can be compartmentalized and refined into various categories as these data would suggest. Since this is only the first pass at these data, it is possible that there could be a fourth and a fifth category that may have eluded capture. Nevertheless, the research raises an important question as to which group, government or entrepreneur, is leading the other. Is government more enlightened in pursuing economic development nationally or is the entrepreneur more enlightened in pursuing his or her economic self-interest individually?

This study also suggests that families, as a unit, are a powerful force as a network for collecting information and resources for the entrepreneur, not only as important resource providers for business expansion efforts, but also as a significant sociopolitical force in thwarting government efforts to move the economy in certain directions unsanctioned or unapproved by family leaders. Such behaviors

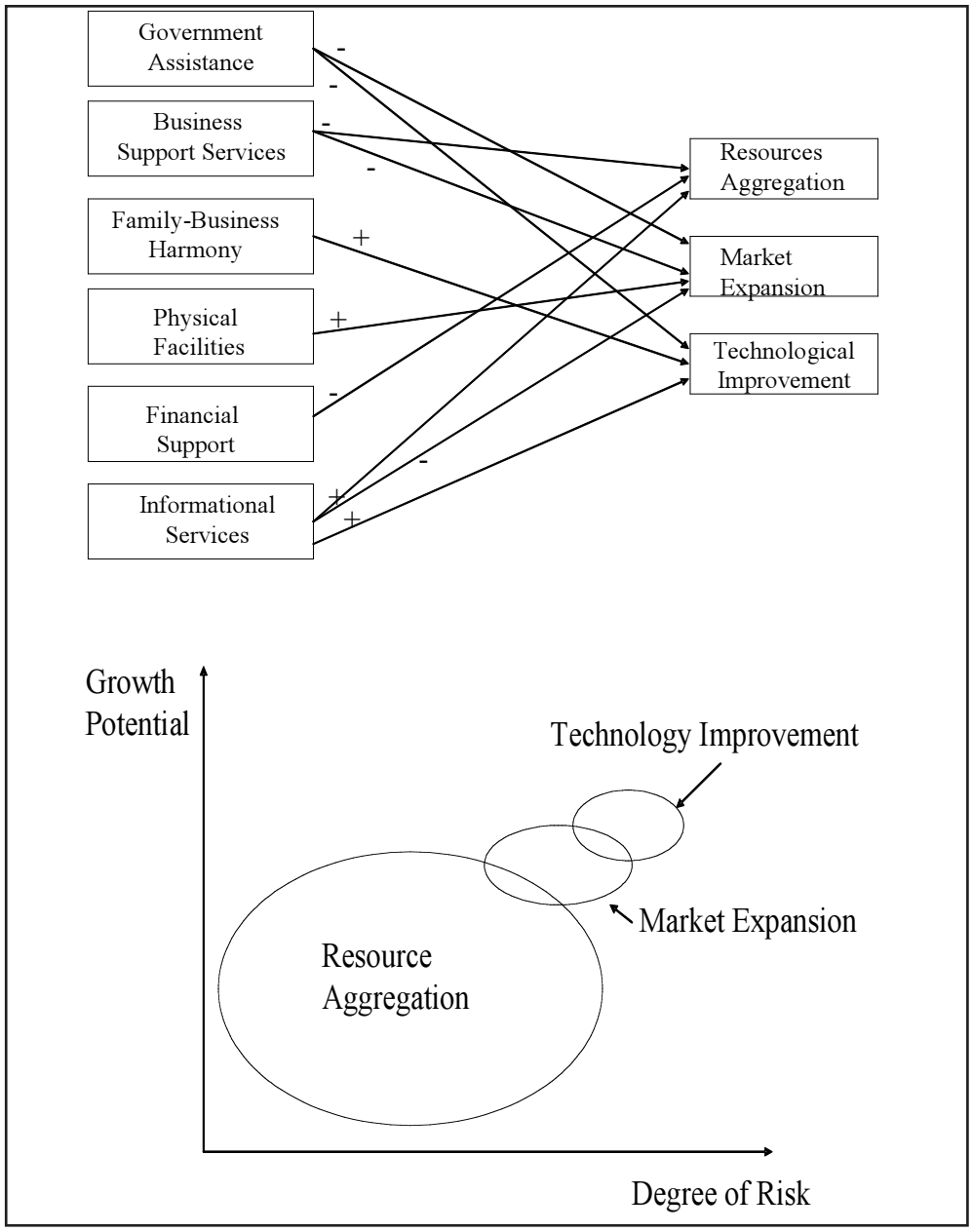

Figure 1. The Effect of Infrastructure on Entrepreneurial Expansion Plans

clearly show the flaws and weaknesses of command economies.

The study also suggests that intentions serve as a powerful force in economic behavior. Even though intentions are the best predictors of planned behavior, surprisingly little attention has been paid to categorize entrepreneurial expansion based on intention. As measures become more accurate and comprehensive, the predictive power of intention-based models will be enhanced.

The major conclusion of this study of Romanian entrepreneurs suggests there is no unitary way of promoting entrepreneurial growth. The effects of infrastructure on the three dimensions of entrepreneurial expansion vary significantly. Therefore, policymakers need to formulate various infrastructure strategies, contingent on the dominant pattern of entrepreneurial growth being sought. Expansion in terms of resource aggregation and technological improvement is mostly determined by the quality of information service, while market expansion is most affected by physical facilities. Economic planners may want to recognize the contingent nature as well as the refinements in expansion planning identified in this study. In extending these findings, plans should be made to test this model in several different national settings.

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About the Authors

Jianwen Liao (liao@iit.edu) is currently an associate professor of entrepreneurship and strategy in the Stuart School of Business at Illinois Institute of Technology. His research interests are in the areas of management of technological innovation, venture creation process, and entrepreneurial growth strategies. His research has appeared in *Entrepreneurship Theory and Practice, Small Business Economics, Journal of Small Business Management, Family Business Review, Journal of Management History, Journal of High Tech Management Research, Frontiers of Entrepreneurship Research,* among others

Harold P. Welsch (hwelsch@depaul.edu)) has been active in entrepreneurship development for more than 25 years in his role as educator, consultant, researcher, entrepreneur, author, and editor. Dr. Welsch is well known for his expertise in technology commercialization, privatization of centrally planned economies, entrepreneurship career paths, formal and informal strategic planning, information seeking and decision behavior, ethnic entrepreneurship, economic development, and small business problems. His work has appeared in many journals and he is an author of several books on entrepreneurship. His recent books include *Strategic Entrepreneurial Growth* (2nd ed.) by Thomson/South Western, *Entrepreneurship: The Way Ahead* by Routledge, and *The Strategy of Entrepreneurship* (in Chinese) by Thomson. In his position as founder of the Entrepreneurship Program and Coleman Entrepreneurship Center at DePaul University, Chicago, Dr. Welsch has served as chairman of the Academy of Management Entrepreneurship Division, president of the International Council for Small Business, and president of the U.S. Association for Small Business and Entrepreneurship (USASBE). He holds an honorary doctorate from Estonian-American University and is recipient of USASBE's Max Wortman Lifetime Achievement Award.

David Pistrui (Pistrui@iit.edu) is director of entrepreneurship and innovation and holds the Coleman Foundation Chair in Entrepreneurship at the Illinois Institute of Technology. With more than 20 years of business experience, Dr. Pistrui serves as an educator, advisor, and consultant to family and closely held businesses, global corporations, and not-for-profit organizations. He is currently the managing director of Acumen Dynamics, LLC, a strategy-based education training and research firm that helps organizations align vision and strategy with execution and performance. Dr. Pistrui holds a Ph.D. in business administration (cum laude) in entrepreneurship, strategy and management from Universitat Autonoma de Barcelona (Spain) and a Ph.D. in sociology from the University of Bucharest (Romania). He earned a M.A. in liberal studies from DePaul University and a B.S. in business administration in marketing and economics from Western Michigan University