2006

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Published in *Journal of International Business Studies* 37 (2006), pp. 92–110.
doi10.1057/palgrave.jibs.8400173

Submitted 19 November 2002; revised 6 May 2005; accepted 3 June 2005; published online 27 October 2005.

Entrepreneurial self-efficacy in Central Asian transition economies: Quantitative and qualitative analyses

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Abstract:
In both quantitative and qualitative field studies, the self-efficacy of entrepreneurs in the transition economies of Kazakhstan and Kyrgyzstan is examined. Using a social cognitive framework, the complex interaction among these entrepreneurs' (*N*=133) personal characteristics, environment, and self-efficacy is analyzed by structural equation modeling. Their self-efficacy was found to have a direct and mediating impact on performance. Another sample of entrepreneurs from these countries (*N*=239) qualitatively assessed what they actually do in their day-to-day activities. The findings from these two studies contribute to better understanding and have implications for successful entrepreneurial practice in countries undergoing the difficult process of transition to a market economy.

Keywords: entrepreneurial efficacy, international entrepreneurship, self-efficacy, entrepreneurship in transition economies, Kazakhstan entrepreneurs, Kyrgyzstan entrepreneurs

Introduction

After almost 15 years, former communist countries in Eastern Europe and Central Asia are still experiencing wrenching political, economic, and social changes. Much has been written about the need for entrepreneurial development as a driving force for the successful transition from planned to market economies (Johnson and Loveman, 1995;

Zahra *et al.*, 2000), but entrepreneurial functioning in former communist countries is still not well understood (Hitt *et al.*, 2000; Puffer, 1999; Puffer and McCarthy, 2001; Slevin and Covin, 1995). This is because the environment is very difficult and even hostile for entrepreneurs, especially those in Central Asia, characterized by the outbreak of hostilities in countries such as Afghanistan and Tajikistan, and coups or political upheavals such as the recent events in Kyrgyzstan. In addition, problems for entrepreneurs in these countries include: resistance to change within the government, religious, business, and social institutions; failing energy, transportation, educational, and healthcare infrastructure; underdeveloped legal and financial systems; restrictive and inconsistent taxation; high interest rates and inflation; and a lack of management skills (Kaser, 1995; Kornai, 1995; Luthans *et al.*, 2000; Olcott, 1996).

Despite the serious roadblocks, entrepreneurship is still identified as the business activity most likely to lead to the successful economic change in transitionary economies (Aldrich and Baker, 1997; Johnson and Loveman, 1995; Puffer and McCarthy, 2001). An important research question then becomes: How can the barriers to entrepreneurial progress in Central Asian transition economies, characterized by dynamic and hostile environments, be overcome?

To date, entrepreneurship research in general has, at best, sent mixed signals. Stand-alone environmental and psychological approaches to the study of entrepreneurship have both been criticized for their conceptual inconsistencies and empirical instability (e.g., Aldrich, 1999; Carroll and Hannan, 2000; Slevin and Covin, 1995). A more comprehensive, interactive, theoretical approach incorporating both environmental and psychological dimensions has been neglected. To address this need, we use Bandura's (1986, 1999, 2001) comprehensive social cognitive framework, which features the interaction between the person, the environment and the behavior itself, and both quantitative and qualitative methodologies, to study entrepreneurs and the entrepreneurial process in two transition economies of Central Asia – Kazakhstan and Kyrgyzstan.

In Study 1, we develop a social cognitive conceptual framework of Kazakh and Krygyz entrepreneurial performance. The derived hypotheses from this theory are tested by structural equation modeling. The following research questions asked over the years in the entrepreneurship field (e.g., Gartner, 1988; Mintzberg, 1973; Naffziger, 1995) are addressed:

1.) What is the impact of the environment on entrepreneurship?
2.) What personality characteristics impact entrepreneurship? Most importantly, and which have not yet been tested;
3.) What is the impact of environment and personality, when studied *simultaneously* in the field setting in transitionary economies?
4.) Does self-efficacy play a mediating role in entrepreneurial performance?

Study 1 represents the first time that social cognitive theory and its derivative of self-efficacy have been used to examine entrepreneurial performance in transition economies.

If Study 1 supports entrepreneurial self-efficacy (ESE) as an important variable in entrepreneurial performance in transition economies, then it follows that there is a need to develop such efficacy to help these struggling economies. However, increasing the self-efficacy of Kazakh and Kyrgyz entrepreneurs requires the identification of context-specific actual behaviors necessary for their execution of their performance. Thus, in Study 2, we drew from an idiographic, qualitative two-stage field study to determine

1. What do entrepreneurs in these two countries actually do in their day-to-day behaviors? and
2. how frequently do they do these activities?

Based on our findings from both studies, we conclude by providing specific guidelines for future theory development, research, and effective application in at least Central Asian economies, characterized by dynamic change and harsh, hostile environments.

Entrepreneurship in transition environments

Despite our rapidly escalating understanding of entrepreneurs and the entrepreneurial process (e.g., Aldrich, 1999; Carroll and Hannan, 2000; Ireland et al., 2001), there is still very little knowledge about entrepreneurial functioning in transition economies in general, and in harsh environments such as those found in Central Asia in particular (Olcott, 1996; Newman, 2000; Peng, 2001; Puffer and McCarthy, 2001). This is important to note, because 'there are major differences in the institutional infrastructures between emerging and developed

economy countries' (Zahra, 1993, 522). These differences affect entrepreneurial development and exchange in the market (Hitt et al., 2000; North, 1990).

Two particularly key distinctions between established and transition economies regarding entrepreneurial functioning have been identified (Hitt et al., 2000). First, new start-ups in developed markets are almost always more resource-rich than those in transition economies. Second, the market context of transition economies such as those found in Central Asia is more dynamic and hostile, as characterized by economic, social, and political instability and uncertainty (Newman, 2000). As a result, 'the entrepreneurship outcomes are not as certain as suggested in the previous literature on the economic transformation in transition economies' (Zahra, 1993, 522).

Following these conceptual differences, we suggest that the rapid and often hostile changes in the political, economic, and social changes in Central Asia are placing unprecedented demands on entrepreneurial functioning in this troubled and volatile part of the world. For example, after the recent coup in Kyrgyzstan, desperate shopkeepers put up signs saying 'We are with the people' to repel the looters who rampaged through Bishkek. The Economist (2 April 2005, 36) recently predicted Kazakhstan as most likely to be the next candidate for such political upheaval and resulting hostilities in the business environment.

Although change is certainly not a new phenomenon to entrepreneurs around the world, the current dynamics and hostility of change in Central Asia are especially challenging. Although when Westerners visit former Soviet countries of Central Asia, the common impression is that time has stood still for 10–15 years, beneath the surface lies a whole new world of change and transformation of the entire economic, political, and social fabric in this region. Unfortunately, up until 9/11 and the war in Afghanistan, little was known about this part of the world. If one of these countries ever made the news, it was typically for some wrongdoing, such as a Justice Department inquiry into the alleged money pipeline between big US oil companies and Kazakhstan's government officials. Now, of course, countries of Central Asia are under the magnifying glass of the world media. Besides the geopolitical implications, this recent exposure of Central Asia to the world has revealed the raging struggle for economic change that is also occurring.

Facing up to the new market challenges in Central Asia is proving to be extremely difficult. In addition to the political and social upheavals, the lack of a market-oriented culture is also thwarting the transition from a planned to a market economy (Luthans et al., 2000). In particular, the nomenklatura (party leaders, bureaucrats) under the old system are threatened, and they do not understand what is needed in the new economy. Their past experience and values are incongruent with the new market principles. The years of Soviet domination not only created an unsupportive environment for innovation, but have also left a legacy of widespread resistance to change. The paradigm shift facing Central Asian entrepreneurs is thus not only to the mechanisms of a market economy but also to new assumptions, thinking, and behavior. The sample of entrepreneurs from Kazakhstan and Kyrgyzstan in this study are faced with such challenges. This harsh entrepreneurial environment in Central Asia would be on one extreme end of the continuum of transition economies, and countries such as those in Central Europe (e.g., Poland, Czech Republic, and Hungary) would be on the other end.

Study 1: Theoretical foundation

The purpose of Study 1 is to test a social cognitive model of entrepreneurial performance in harsh transition economies. Entrepreneurship, as it applies to the new paradigm context of Central Asia (Luthans et al., 2000), is a relatively new and interdisciplinary (Churchill, 1992) field of study without a widely agreed-upon theoretical framework (Slevin and Covin, 1995). As a result, even the definition of an entrepreneur is not agreed upon (Ireland et al., 2001). Related to post-communist countries with hostile environments, those starting new ventures and then operating them as small business owners/managers are considered entrepreneurs in this study.

In the academic entrepreneurial field as a whole, there is a growing consensus that multiple variables influence the process (e.g., Herron et al., 1992; Aldrich, 1999). The purpose of this study is both to extend the established psychological and environmental approaches to the study of entrepreneurship (e.g., Aldrich, 1999; Carroll and Hannan, 2000; Naffziger, 1995) and to focus on entrepreneurial performance in dynamic and hostile transition economies. We propose a social cognitive model of the entrepreneurial process resulting in performance outcomes as shown in Figure 1.

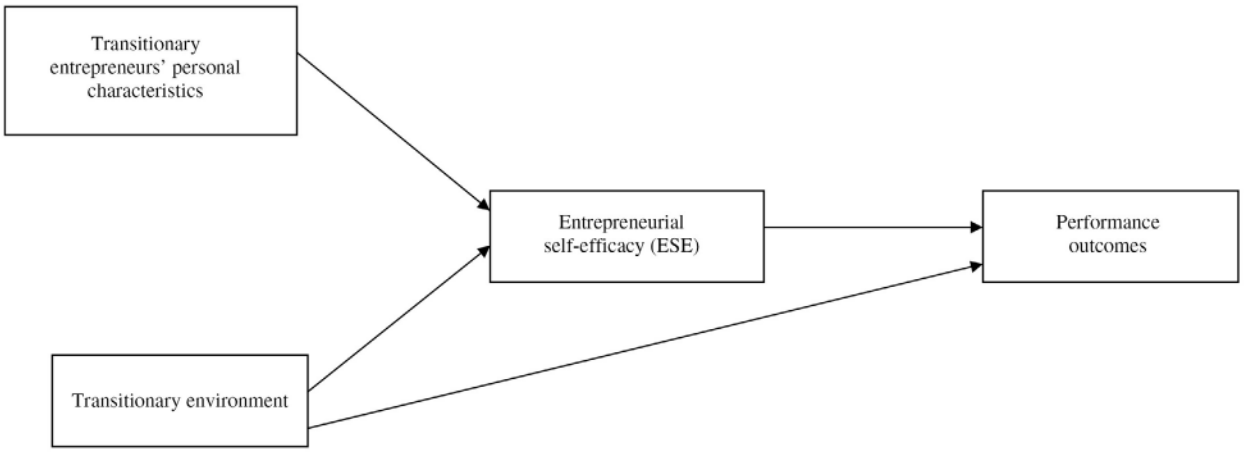

Figure 1. The proposed entrepreneurial self-efficacy model of entrepreneurial performance in transitionary economies.

This model is based on the widely recognized social cognitive theory (SCT) and its major derivative, self-efficacy (Bandura, 1986, 1997, 1999, 2001; Maddux, 2002; Stajkovic and Luthans, 1998a, 1998b). The basic premise of SCT is that behavior can be understood as a continuous interaction among cognitive, behavioral, and environmental determinants. As Bandura (1977, 9) explains: 'It is largely through their actions that people produce the environmental conditions that affect their behavior in a reciprocal fashion. The experiences generated by behavior also partly determine what a person becomes and can do, which, in turn, affects subsequent behavior.'

Embedded within Bandura's SCT are both self-regulation and self-reflection. It is the psychological capability for self-reflection – people reflect back on their actions/experience with a specific event/task to then cognitively process how strongly they believe they can successfully accomplish this event/task in the future – that serves as the theoretical basis for self-efficacy (Bandura, 1997, 1999). Specifically, he defines self-efficacy as the belief of 'how well one can execute courses of action required to deal with prospective situations' (Bandura, 1982, 122). He concludes from years of research that self-efficacy is the most pervasive and important psychological mechanism of self-influence (Bandura, 1997, 1999, 2001).

Drawing from Bandura's SCT and self-efficacy theory, our proposed model in Figure 1 shows that both personal characteristics of entrepreneurs and their environmental context provide the major input into what we call their entrepreneurial self-efficacy (ESE). As shown,

we propose that this ESE mediates performance outcomes. The following sections give more detailed analysis of the specific components of this theoretical model for entrepreneurial success in harsh, transition economies.

Entrepreneurial personal characteristics

Begley and Boyd (1987) found that the personal characteristics of an entrepreneur are critically important in the formative stages of a small business. This finding seems especially relevant in transition economies, where most entrepreneurial ventures are relatively small, and the new start-ups are typically managed by the entrepreneur. There is considerable support for the positive relationship between an entrepreneur's psychological characteristics and performance (Chell et al., 1991; Johnson, 1990; Shaver and Scott, 1991). However, research also suggests that if personality has an impact on entrepreneurial performance, then it is likely to be a combination of psychological characteristics and not a single trait (e.g., Churchill, 1992; Naffziger, 1995).

Over the years, need for achievement (nAch) has been the most frequently used personal characteristic as a predictor of entrepreneurial performance (Johnson, 1990; McClelland, 1987). The other personal characteristic often related to entrepreneurship performance is locus of control (Brockhaus, 1982; Van de Ven et al., 1984), defined as the extent to which individuals tend to perceive life/performance outcomes as being either internally (self) or externally (situation) determined (Rotter, 1966).

Previous entrepreneurship literature has examined these two widely recognized personal variables separately; our proposed social cognitive theoretical model differs in that it simultaneously includes need for achievement and locus of control. These two indicator variables form a personal characteristics latent construct. This is because using a single (observed) indicator of a wider (unobserved) psychological construct is usually considered both theoretically (Churchill, 1992; Naffziger, 1995) and methodologically (Bollen, 1989) an under-representation of reality.

As shown in the model, we do not propose a direct effect of the personal characteristics latent construct on performance outcomes in this environment. This is because its indicators (nAch and locus of control) represent relatively fixed personality traits. Over the years,

such traits have been found to have a weaker impact on work-related performance than state-like (situation-specific) variables such as self-efficacy (Bandura, 1997, 2000; Stajkovic and Luthans, 1998a). Specifically, we propose that ESE may not only be more conceptually related to entrepreneurial experience than relatively fixed dispositional personality characteristics but will also have a more direct impact on performance outcomes. Specifically, we propose that the needs for achievement and locus of control act as psychological antecedents of the domain-specific ESE (given detailed attention next), which, in turn, influences performance outcomes. However, the model starts with the dispositional antecedents because it is hard to imagine an efficacious entrepreneur without them. We suggest that entrepreneurs in this part of the world endure not only countless hours of dedicated effort but also inevitable frustration and many obstacles. They would seem to need personal characteristics of desire for success (nAch) and a belief that a source of their success lies largely within themselves (internal locus of control).

The meaning of ESE

As indicated in our theoretical foundation discussion, self-efficacy relates to human functioning through people's beliefs and confidence in their capabilities to affect the environment and be successful by their behaviors (Bandura, 1977, 1982, 1999, 2001). This self-efficacy has been clearly demonstrated to have a strong positive relationship with performance outcomes (Bandura, 1997, 2000; Stajkovic and Luthans, 1998a). Drawing from this extensive theory and research, we define entrepreneurial self-efficacy (or simply ESE) as entrepreneurs' beliefs and confidence in their capabilities to affect their environment and become successful by their behaviors. Importantly, ESE is influenced by and, in turn, influences performance. ESE is not reducible to just entrepreneurial skills or knowledge. Rather, ESE is a personal belief and confidence. It has the potential to create change and determine what entrepreneurs will do with the entrepreneurial competencies (i.e., knowledge and skills) that they already have.

As shown in Figure 1, we propose that this ESE will mediate dispositional traits such as nAch and internal locus of control, and be the most direct psychological capacity in determining entrepreneurial performance. Drawing from Bandura's (1997) extensive self-efficacy

theory and research, we propose that the level of ESE is likely to determine the initial decision to start and enthusiastically get into a business, the amount of effort that will be expended to make it successful, and – especially important in this study's harsh environment – the degree of persistence exhibited in the face of adversity (see Bandura, 1997, 2000; Luthans et al., 2000; Stajkovic and Luthans, 1998a, 1998b).

Although entrepreneurial efficacy has been briefly mentioned in the entrepreneurial literature (e.g., Boyd and Vozikis, 1994; Krueger and Brazeal, 1994), it has not been applied to the international arena. We argue that ESE is particularly relevant in transition economies because most new and potential entrepreneurs in these countries have not had business experience under market-economy conditions. They have received very little, if any, entrepreneurship-related training or education. Given the general lack of market, private enterprise knowledge or skills among entrepreneurs in these economies, many are forced to 'learn as they go' (Gartner, 1984).

To build their ESE, entrepreneurs in hostile, transition economies must not only gain efficacy beliefs from related actions but also have to do it very quickly to survive. The challenges are immense, and there are few second chances. In fact, the key question that may best determine the business success in countries in Central Asia is not whether entrepreneurs have to adapt to the new paradigm, but how quickly they can do it. As Stajkovic and Luthans (1997, 1141) suggest 'Expectations of personal efficacy appear likely to hinder an individual's coping behavior directed toward the most cherished outcomes if the person doubts that he or she can do what is necessary to succeed, whereas a sense of high personal efficacy may help sustain efforts even in light of uncertain outcomes.'

This leads to our first theory-driven hypotheses to test in Study 1:

Hypothesis 1a: Kazakh and Kyrgyz entrepreneurs' personal characteristics (need for achievement and locus of control) are related to their self-efficacy.

Hypothesis 1b: Kazakh and Kyrgyz entrepreneurs' self-efficacy mediates the relationship between their personal characteristics and performance outcomes.

Impact of the environment on entrepreneurial self-efficacy

Besides the personal characteristics, as shown in Figure 1, we propose that ESE is also influenced by contextual factors. The harsh entrepreneurial environment of Central Asia (Connor, 1991; Luthans et al., 2000; Olcott, 1996; Taylor, 1997), characterized by dynamism and hostility (given detailed attention next), may be taken as both a threat and an opportunity. Highly efficacious entrepreneurs in harsh, transition economies, who face daily frustrations and constant problems, may be more likely to increase effort and persist on the task which, if well executed, produces successful outcomes (i.e., mastery experiences). As Bandura (2000, 126) notes: "Mastery experiences, especially those gained through perseverant effort and ability to learn from setbacks and mistakes, build a resilient sense of efficacy." Thus, the more mastery experiences entrepreneurs have, and the more they learn vicariously from other successful entrepreneurs, the more likely they are to believe that they can affect and overcome the obstacles from the environment and perform well (Bandura, 1997; Stajkovic and Luthans, 1998a; Vesper, 1980). It follows that we hypothesize:

Hypothesis 2: The environment facing Kazakh and Kyrgyz entrepreneurs in harsh, transition economies, manifested and measured by dynamism and hostility, is positively related to their self-efficacy.

The transition environment and performance outcomes

As we previously noted, the countries of Central Asia have experienced not only drastic political and economic but also social and psychological, changes in their transition to a market economy (Luthans et al., 2000). In particular, the environment in the transition economies of the former Soviet Union in general and Central Asia in particular can be depicted as very dynamic and hostile (Aslund, 1995; Nelson and Kuzes, 1995; Newman, 2000; Olcott, 1996; Puffer and McCarthy, 2001; Taylor, 1997). Thus, to represent the latent construct of the transitionary environment shown in Figure 1, we chose two relevant environmental dimensions with measures: dynamism (Miller and Friesen, 1983) and hostility (Khandwalla, 1977).

The old constraints still embodied in the political, legal, and bureaucratic systems remain profoundly powerful in the present economic environment of Central Asia (Kornai, 1995; Luthans et al., 2000; Olcott, 1996; Peng and Heath, 1996). Inevitably, performance outcomes in such conditions are at least in part dependent on factors outside the entrepreneur's direct influence (e.g., monetary and fiscal instability, resource shortages of all kinds, inflation, inefficient banking regarding currency supply, inadequate legal infrastructure especially with regard to property rights, and outright hostilities and even looting stemming from political upheavals). This leads to our third hypothesis:

Hypothesis 3: The harsh environment facing Kazakh and Kyrgyz entrepreneurs, manifested and measured by dynamism and hostility, is negatively related to performance outcomes.

Study 1: Methodology

To represent hostile transition economies, data were collected from entrepreneurs in the former Soviet Union, Central Asian countries of Kazakhstan (N=75), and Kyrgyzstan (N=58). These countries were selected because one of the researchers was a native to the region and had the trust to gather the relatively sensitive data face to face from the entrepreneurs. Also, these two countries were selected because the historic, cultural, and contemporary similarities between the two permitted them to be combined into one sample for our analysis. Such cultural clustering is commonly used (e.g., Hofstede, 2001; House et al., 2004), and these two countries are recognized as having such similar cultures that they were regarded as one country under imperial Russia (Olcott, 1996). Empirical support for the similarity comes from our qualitative Study 2, which found the profiles of the entrepreneurial behaviors in the two countries to be very similar (see Table 5). Demographically, this combined group (N=133) of Kazakh and Kyrgyz entrepreneurs were relatively young ($\bar{x}$=39 years), well educated ($\bar{x}$=15 years of formal education), and many of them were women (40%).

Although not randomly selected, volunteers for the study had to meet two inclusion criteria:

1.) participants had to start, own, and manage an officially registered private enterprise; and
2.) participants had to be in business for at least 3 years.

These criteria assured the inclusion of only legally recognized entrepreneurs, and excluded those from the 'underground economy' and transient street vendors. The entrepreneurs in this sample averaged 6 years in private business. Eighty-five percent of the entrepreneurs were providing small retail services and the remaining 15% were producing goods. Although a few of these ventures were spin-offs of state-owned enterprises, they were all privately owned by the sampled entrepreneurs. The average number of full-time employees was 25, and of part-time employees 7. Like the rest of the world, and specifically in the transition economies, most of the businesses owned by the entrepreneurs in this sample are new, small, and predominantly in retail or service industries.

Study 1 measures

A legitimate concern in international research is the transfer to other cultures and languages of the meaning and intent of standardized scales based on the English language (Earley, 1993, 1994). We employed the widely recognized back-translation method for all the study measures to minimize these problems (Earley, 1989). Specifically, the researcher who is native to the research site, but educated and employed in the US, translated the scales first. Then, a second bilingual specialist in the languages translated the scales back into English. Discrepancies in terminology and/or intent were discussed until the differences were reconciled. The translated scales were also piloted and reviewed by several in-country entrepreneurs with the native-born and raised member of the research team.

Entrepreneurial personal characteristics

Representing the first exogenous variable (ξ_1) in the structural equation model shown in Figure 2, this latent construct was indicated by two manifest variables: need for achievement (λ_{x1}) (Mehrabian and Banks, 1978) and locus of control (λ_{x2}) (Rotter, 1966). Cronbach reliability coefficients were high for both scales: α=0.88 and α=0.80, respectively.

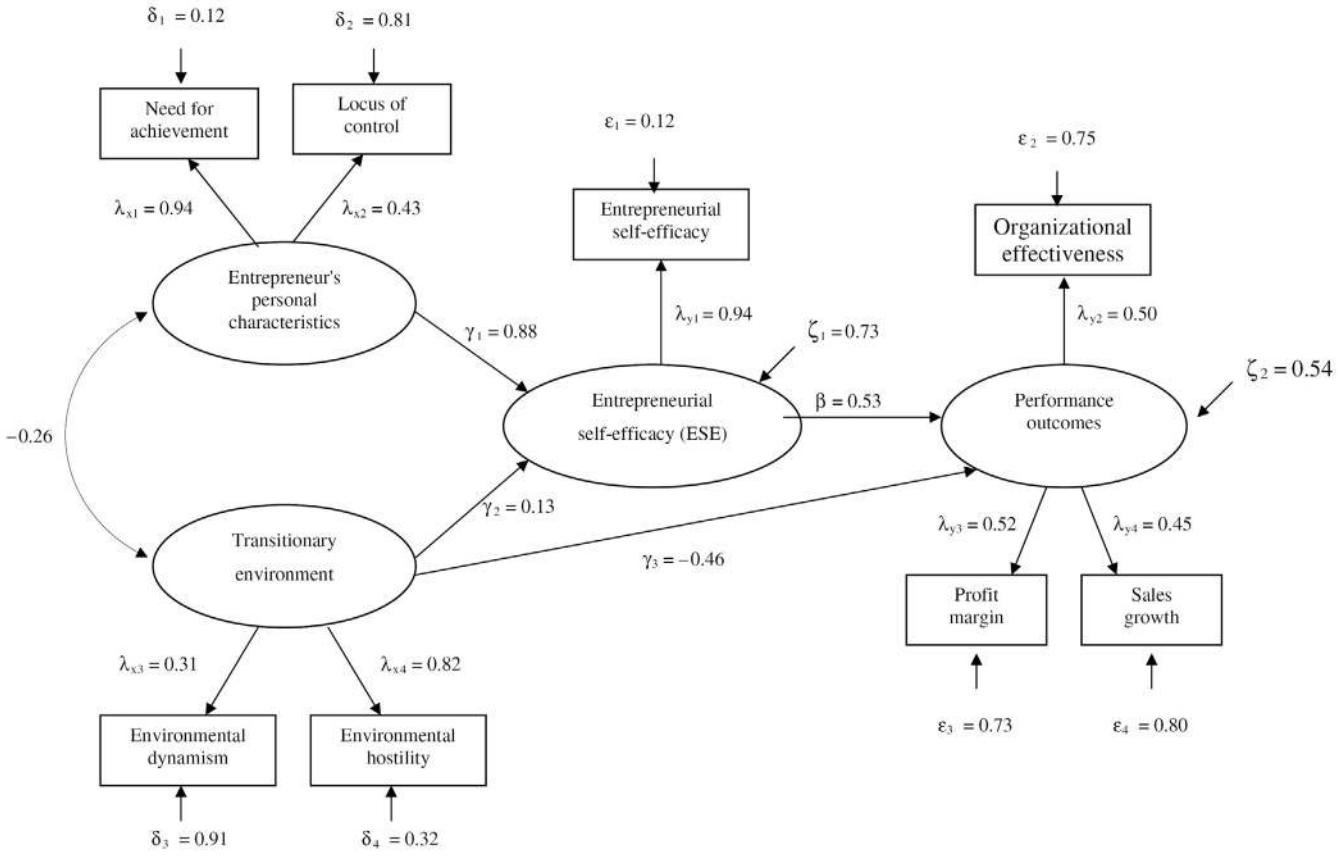

Figure 2. The measurement and structural models.

Transitionary environment

Representing the second exogenous construct (ξ_2), the transitionary environment was indicated by two manifest variables: environmental dynamism (λ_{x3}) and environmental hostility (λ_{x4}). The dynamism scale (Miller and Friesen, 1983) (α =0.70) estimates the degree of environmental change. It is defined as the degree of instability or turbulence in the environment manifested in key market and industry conditions, as well as in the more general technological, economic, social, and political forces (Dess and Beard, 1983; Aldrich, 1999). The environmental hostility scale (Khandwalla, 1977) (α =0.70) represents the level of resources available to enterprises from various sources in the environment (Aldrich, 1999). Specifically, it reflects the degree to which the environment is a proximate threat to the enterprise due to issues such as harsh and overwhelming business climates, and the relative

lack of exploitable opportunities. Nonhostile or benign environments, on the other hand, provide a safe setting for business operations. This is due to their overall level of munificence and availability of investment, as well as other market opportunities (Covin and Slevin, 1989).

ESE

Representing the first latent endogenous construct in the model (η_1), the ESE was measured by adapting the Sherer et al. (1982) efficacy scale specifically to entrepreneurship for this study (α=0.88). Since we intended to capture related domains of entrepreneurial activity, and relying on established psychometric properties (1–14 anchors, efficacy domain) of the Sherer et al. (1982) widely recognized efficacy scale, we focused the items on the entrepreneur's efficacy to start and manage the business, vicariously learn, and interact with other entrepreneurs and business partners (λ_{y1}).

Performance outcome measures

A second endogenous variable (η2) was performance outcomes. They were estimated by multiple indicators: perceived organizational effectiveness (λ_{y2}), profit margin (λ_{y3}), and sales growth (λ_{y4}). The Mott (1972, 17) organizational effectiveness scale (α=0.81) measured 'the ability of an organization to mobilize its centers of power for action, production and adaptation'. The profit margin was assessed by comparison of the company's profits with that of its competitors (Dess and Robinson, 1984), where the seven response options ranged from "decreased 30% or more than industry competitors" to "increased 30% or more than industry competitors." The sales growth was assessed by the firm's 3-year trends in revenues (Dess and Robinson, 1984), where the eight response options ranged from 'decreased 30% or more' to 'increased more than 50%.' We used the ranges of profit margins and sales growth suggested in the literature (Dess and Robinson, 1984) and our pilot work in order to overcome the possible reluctance of the entrepreneurs in the sample to reveal their exact profits and growth.

Structural equation modeling analysis

To estimate the proposed model, we performed structural equation modeling (Bollen, 1989) using the sample covariance matrix as input. By using s.e.m., we were able to

1. study meaningful relations among the latent constructs, while at the same time accounting for the measurement model of observed indicators;
2. test the specific hypotheses; and
3. estimate the overall fit of the hypothesized, theoretical model to the data.

Multiple measures of goodness of fit are provided and discussed in relation to the hypothesized structural model shown in Figures 1 and 2.

Results of study 1

Table 1 presents the descriptive statistics and correlation matrix for all study variables. Table 2 shows the covariance/variance matrix using an input matrix (see Bollen (1989), and Kline (1998) for details on advantages of the covariance matrix over the correlation matrix in s.e.m.). Given the importance of kurtosis and skewness in s.e.m. (Bollen, 1989; Kaplan, 2000), Table 3 provides an assessment of the data's multivariate normality. As shown, all variables are normally distributed, and the sample data also meet the assumption of multivariate normality.

Measurement model

The measurement model specifies the relations between latent (unobserved) and indicator (observed) variables, and is algebraically defined by two equations: $x = \lambda_x \xi + \delta$ and $y = \lambda_y \eta + \varepsilon$.

Taken separately from the structural model, the measurement model represents confirmatory factor analysis (CFA). The measurement model (CFA) was estimated through four algebraic matrices: Λ_x, Λ_y, Θ_δ, and Θ_ε. In particular, complying with Bollen's (1989) *t*-rule, our model had fewer estimated parameters than the number of unique elements in the covariance matrix ($p \times [p+1]/2$), and, following initial model specifications, the CFA model converged to a solution indicating sound parameter estimates. Since the structural model was mathematically equivalent to the CFA model, all indexes of model fit (see below) were identical (Kline, 1998). Figure 2 shows the results of the measurement and hypothesized structural models. Provided as completely standardized solutions, path values in the model are statistically significant ($P<0.05$).

Structural model

The structural model refers to relations among exogenous and endogenous variables. In s.e.m., these variables are constructs and are therefore unobserved. Such variables are referred as latent, or true, variables (Bollen, 1989). The structural model is defined as $\eta=\Gamma\xi + \varsigma$ and is estimated through four matrices: Γ, B, Φ, and Ψ. The structural model presupposes that

1.) means of all variables=0;
2.) ξ and ς are not correlated; and
3.) all matrices are nonsingular.

The recursive model shown in Figure 1 explained 27% of the variance in ESE and 46% of the variance in performance. Structural paths, specified in the model, provided tests of the hypotheses. In particular, the -0.26 ($P<0.05$) value between the personal characteristics and transitionary environment is a bivariate correlation and, as is common in s.e.m., was unanalyzed in the model (Φ_{21} element in Φ covariance matrix). Structural paths

a.) between entrepreneurial personal characteristics (ξ_1) and the ESE (η_1) ($\gamma_1=0.88$, $P< 0.05$), and
b.) between the ESE (η_1) and performance (η_2) ($\beta=0.53$, $P<0.05$), were both significant, supporting Hypotheses 1a and 1b.

The path between the transitionary environment (ξ_2) and the ESE (η_1) ($\gamma_2=0.13$, n.s.), while in the positive direction, did not reach statistical significance, and thus Hypothesis 2 was not supported. Finally, the path between the transitionary environment (ξ_2) and entrepreneurial performance (η_2) ($\gamma_3=-0.46$, $P<0.05$) was negative and significant and therefore supported Hypothesis 3. Results of the structural model show that ESE explained more variance in entrepreneurial performance (28%) than did the transitionary environment (21%). However, taken together, ESE and the transitionary environment explained 46% of the variance (ς_{22} element in Ψ covariance matrix) in performance outcomes.

Goodness-of-fit indexes

Goodness-of-fit indexes are critical for the evaluation of any structural model. Yet, given their complexity, there is no consensus regarding the

"best" index of overall fit for structural equations (Bollen, 1989). Furthermore, different indexes have different meanings, refer to different estimation procedures, and have values that are not always comparable (Bollen, 1989; Kline, 1998). Specifically, the covariance structure hypothesis is: H_0: $\Sigma=\Sigma(\theta)$, where Σ=population covariance matrix; $\Sigma(\theta)$=population model implied covariance matrix.

The overall model fit measures help to assess whether H_0: $\Sigma = \Sigma(\theta)$ is true, and, if not, they help to estimate the departure of $\Sigma(\theta)$ from Σ. However, since both Σ and $\Sigma(\theta)$ are population parameters, we examine their sample parameters: H_0: $S= \Sigma(\theta)$ where S=sample covariance matrix, and $\Sigma(\theta)$ is the sample implied covariance matrix. Virtually all measures of fit involve functions of S and $\Sigma(\theta)$. These fit indexes gauge the closeness of $\Sigma(\theta)$ to S, although this closeness is measured in different ways. Thus reporting multiple indexes is encouraged (Bollen, 1989; Kline, 1998). All six fit indexes we obtained indicate a good fit of the proposed model to the data.

The χ^2 model fit

When using maximum likelihood estimation of the structural model (as we did), the χ^2 test can be used to test H_0: Model fits, for over-identified models (as our is), where *d.f.*=the difference between the number of observations in the covariance matrix and the number of model parameters to be estimated (Bollen, 1989). The χ^2 test in our study indicates a good fit of the model to the data, thus rejecting the H_1 that the model does not fit (χ^2=25.60, *d.f.*=18, *P*>0.10). Thus, there is no significant statistical difference between our theory-based model and a just-identified version of it, indicating that we explained the original correlations at a level not statistically different from the value of 1. Moreover, since the χ^2 test is influenced by sample size (where as the sample size increases, the same amount of 'misfit' will eventually lead to the rejection of the null hypothesis), the test for the sensitivity to sample size again showed that our model fits the data (χ^2/ d.f.=26.60/18=1.42 <3) (Bollen, 1989; Kline, 1998).

Incremental model fit

These indexes examine how well the model fits as compared with a null model, also called an independence model, and it assumes that all variables in it are uncorrelated. The Bentler–Bonett non-normed fit index (NNFI) (also known as the Tucker–Lewis index)

represents the proportion of improvement in fit relative to the null model, while controlling for model parsimony. The value we obtained (NNFI=0.94) represents good fit of the model to the data (suggested NNFI>0.90). The comparative fit index (CFI=0.96), as another index of incremental fit we obtained, also showed a good model fit (suggested CFI>0.90).

Model fit measures based on residuals

These measures estimate the magnitude of the difference $S - \Sigma(\theta)$, and are typically represented by two indexes: GFI (goodness-of-fit index) and AGFI (adjusted goodness-of-fit index). The GFI represents the proportion of covariance explained in S by $\Sigma(\theta)$, and the AGFI is its adjusted for cross-validation version (thus it is always smaller). The values we obtained (GFI=0.95, AGFI=0.91) represent good (suggested GFI >0.95) fit of the model to the data (suggested AGFI>0.90) (Bollen, 1989; Kline, 1998).

Population error of approximation model fit

This type of model fit measure is typically represented by RAMSEA (root-mean error of approximation) index, which represents a standardized version of the population discrepancy function. RAMSEA estimates the magnitude of $\Sigma - \Sigma(\theta)$ difference, and the value 0.06 we obtained represents a good fit (RAMSEA <0.10).

Discussion of Study 1

We proposed and tested a social cognitive model of entrepreneurial performance in two dynamic, hostile transition economies in Central Asia. The majority of significant findings, substantial amount of variance explained, and multiple goodness-of-fit indexes provide at least beginning evidence of the predictive validity of the model. Although some attention has been given to the role that self-efficacy may play in entrepreneurial activity, one unique contribution of the findings of this study was the mediating role that ESE plays in performance outcomes. Also, for the first time, the study results indicate a *simultaneous* impact of psychological and environmental variables on entrepreneurial performance outcomes in transition economies. To date, no study has shown that ESE and environment contribute almost equally (almost half of the total variance) of performance outcomes in transition economies.

A particularly important finding in this study is that the dynamic and hostile environment had a negative impact on entrepreneurial performance outcomes, whereas ESE had a positive impact. This finding suggests that both the environment and the psychological cognition (i.e., efficacy beliefs or confidence) of entrepreneurs may play an important role in the transition to a market economy. This extends theories of entrepreneurship that have mainly focused on one-sided determinism. To date, these theories have focused on either environmental or personal characteristics variables as unique predictors of entrepreneurial action. However, from our proposed social cognitive theory perspective, either approach alone falls short of capturing the complexity of entrepreneurial action. This study supports that the interaction of both cognitive psychological and environmental variables contributes to performance outcomes. By applying Bandura's (1986, 1997, 2001) social cognitive theory and its derivative of self-efficacy, we feel that a more comprehensive understanding of the entrepreneurship process and its impact on performance in at least dynamic, hostile transition economies can be attained.

Owing to the harsh reality in these countries, many outside experts and local people simply dismiss the possibility of successful entrepreneurial development. We suggest that instead of lamenting the seemingly impossible challenges imposed by transitionary environments, it may be time to focus on how entrepreneurs can deal with these challenging circumstances and try to turn threats into opportunities. Specifically, based on social cognitive theory (Bandura, 1986, 1997, 2001) used in this study, and the recently emerging positive psychology (Seligman and Csikszentmihalyi, 2000; Snyder and Lopez, 2002) and positive organizational behavior (Luthans, 2002a, 2002b; Luthans and Youssef, 2004) movements, we call for increased attention to the positive psychological capacities of entrepreneurs. The seeming importance of entrepreneurial self-efficacy to performance outcomes as found in this study gives at least beginning empirical support to such a positive approach. Instead of the current media emphasis on 'what is wrong with entrepreneurs' in this and other parts of the world, we feel contribution in theory and research can be made by taking a positive approach to entrepreneurship and studying 'what is right with entrepreneurs' in general and in transitionary economies in Central Asia in particular.

As to the practical implications of our findings, taking a positive psychology and organizational behavior approach, we suggest that

the actions needed to foster entrepreneurial development in transitionary economies can focus on two fronts:

1.) fostering a positive environmental context; and
2.) developing entrepreneurial self-efficacy and positive confidence.

A positive environmental context for entrepreneurs in transitionary economies would include not only political encouragement and stability, but also more specifically a faster pace of privatization, more financial assistance and tax incentives, reducing barriers for investment, and creating a more favorable infrastructure such as stable financial and legal structures capable of facilitating the development of market institutions.

Such positive environmental development will take considerable time and money. However, at a more direct, pragmatic level, our study supports entrepreneurial development in harsh, transition economies such as are found in these two countries in Central Asia, through enhancing efficacy beliefs and confidence. Although we realize that increasing entrepreneurial self-efficacy is not the only solution to the problems in these countries, its recognition and development may be a relatively low-cost important first step toward economic progress. Based on social cognitive theory, it is important to recognize that, unlike relatively fixed personality traits, self-efficacy is state-like and thus can be developed (Bandura, 2000; Gist and Mitchell, 1992; Luthans, 2002a, 2002b; Luthans and Youssef, 2004; Stajkovic and Luthans, 1998b). Therefore, we suggest that both public and private support could be organized toward designing effective entrepreneurial self-efficacy development programs in transition economies.

As an example, a program could be set up where both aspiring and less-confident existing entrepreneurs are provided with training focused on both the necessary skills to start and effectively run a small business and the efficacy and confidence to do it. Such a program would have a dual purpose:

1.) to address the behaviors necessary for successful entrepreneurial performance; and
2.) based on those behaviors, to focus on building entrepreneurial self-efficacy.

The necessary first step in this effort to enhance ESE (as in other areas of efficacy building; Bandura, 1997, 2000) is to determine what do

entrepreneurs do in terms of actual, day-to-day behaviors. Obviously, without knowing what entrepreneurs' specific behaviors are needed to succeed in specific environments such as found in this study, it is hard to build their related ESE. This important follow-up research question led us to conduct a second qualitative study in the same setting with two different samples of entrepreneurs.

Qualitative Study 2

Building upon the theoretical foundation and proposed model tested in Study 1, the purpose of Study 2 is to provide answers to two specific research questions:

1.) What observed behaviors do entrepreneurs in the transition economies of Kazakhstan and Kyrgyzstan, characterized by dynamic and hostile environments, exhibit?
2.) What are the relative frequencies of these entrepreneurial behaviors?

Insights into these questions then could not only be used to better understand entrepreneurial behaviors in that part of the world but could also help to develop the entrepreneurial self-efficacy found to be important to performance in Study 1.

Study 2 methodology

There were two phases of this qualitative Study 2: unstructured and structured observations. The two phases used different samples of Kazakh and Kyrgyz entrepreneurs, which were again combined for the reasons discussed in Study 1. Using the idiographic approach to qualitative research suggested and previously used by Luthans and colleagues in determining managers' behaviors both in the US and in Russia (Luthans and Davis, 1982; Luthans and Morey, 1984; Luthans et al., 1988; Luthans et al., 1993), these Central Asian entrepreneurs were observed using time sampling in their naturally occurring settings.

Similar to the previous Luthans et al. (1988, 1993) qualitative studies in the US and Russia, in both phases of observing these Kazakh and Kyrgyz entrepreneurial activities, we used the well-known multi-trait, multi-method (MTMM) approach (Campbell and Fiske, 1959; Lawler, 1967). However, since the focus was on directly observable behaviors,

this behavior was substituted for traits, and multi-method was substituted with multi-rater because we determined entrepreneurial behaviors through direct observation by more than one rater instead of combining data collection methods. Thus for both the unstructured and structured observations, we used multi-behavior (more than one behavior observed), multi-rater (with more than one rater) method (Luthans and Lockwood, 1984; Luthans and Morey, 1985) and followed the procedures used in the Luthans et al. (1988, 1993) observational studies of US and Russian managerial behaviors.

Study participants

We employed the same inclusion criteria for participating entrepreneurs in both phases of this qualitative study as was used in Study 1, and the resulting profile was very similar. Specifically, this group of entrepreneurs (N=57 for the unstructured first phase and N=182 for the structured second phase) was also relatively young (average 36 years) and educated (most had a college degree), but had relatively fewer women at 16%. This sample is generally consistent not only with Study 1 but also with previous research, suggesting that entrepreneurs in transition economies are relatively young and educated (Puffer and McCarthy, 2001; Puffer, 1994; Walck, 1994). This literature concludes that young age helps the adjustment to the new, free enterprise system, for

1.) few young people had much work experience within the communist bureaucracy; and
2.) education allows these young entrepreneurs to handle more effectively the remaining government hurdles and other bureaucratic barriers to the entrepreneurial process in these countries.

Also, like the sample in Study 1, the large majority of these entrepreneurs owned small businesses that employed under 20 employees, and about half had sales revenues under $50,000 a year.

Phase 1 of Study 2

Unstructured observation

This phase consisted of *in situ*, unstructured observation by observers (students from the local university, trained by the researcher) who directly recorded on-the-job behaviors of the target entrepreneurs

in both Kazakhstan (*n*=28) and Kyrgyzstan (*n*=29). The trained observers recorded on a blank sheet of paper all activities exhibited by the target entrepreneurs, for one random hour per day, every working day for 2 weeks. To avoid observation errors and biases, the observers were given formal training on the 10 systematic errors commonly encountered in direct observations (Campbell, 1958; Thornton and Zorich, 1980). Observers were also shown examples of what an observation log might look like, and an example of a representative observation schedule. This phase yielded, respectively, 280 and 290 hours of direct observation.

Post-log survey

After the 2-week observation period was completed, entrepreneurs were asked how well a sampling of the observational logs represented their day-to-day activities. This survey was conducted to ensure:

1.) that the observed behaviors were representative;
2.) that no important behaviors were left out; and
3.) that the logs made sense to these entrepreneurs in terms of 'face' validity.

The post-log survey (on a Likert-type 1–5 scale) resulted in means of 4.21 for the Kazakh sample and 4.15 for the Kyrgyz sample. These findings showed that the observation logs represented the typical behaviors of the observed entrepreneurs from a considerable extent (rated 4) to a great extent (rated 5). The entrepreneurs also indicated that activities accounting for the slight differences in log reliability (4.21 and 4.15 *vs* 5) were those occurring outside the place of business (unobserved), such as visiting government agencies and financial institutions.

Delphi analysis

All 570 hours of observation were submitted to content analysis of the data by the Delphi technique (e.g., Delbecq et al., 1975). The purpose of this analysis was to condense the multitude of observational data into broader, conceptually meaningful behavioral categories. The Delphi process used eight panel members (three researchers and five general members) to give anonymous input. As typical in this procedure, no attempt was made to distinguish the data among the panel members. The Delphi process consisted of anonymous

input, composite feedback, and multiple iterations. Specifically, first, all members of the Delphi panel received all data from the behavioral logs. No set number of behavioral categories was specified for this first iteration. In subsequent iterations, based on the feedback received, panel members worked toward determining comprehensive, mutually exclusive behavioral categories from the raw data. The process continued for several iterations until the behavioral categories were determined and agreed upon by the panel members (Delbecq et al., 1975; Helmer, 1983; Kerlinger, 1979).

Phase 2 of Study 2

Structured observation

The purpose of this phase was to determine the relative frequencies of the activities identified in the first – unstructured observation – phase. The entrepreneurs in this structured observation (n=182) phase were all different from those in the unstructured observation phase, but were selected in the same manner using the same criteria, as described above. Each entrepreneur was observed during a random 10-min time period each hour, over a 2-week period, approximately 80 times by inside participant observers and 20 times by outside raters.

Observer procedures

The observers in this Phase 2 knew what behaviors to observe (obtained in Phase 1), which they learned through detailed training sessions (described below). They received a checklist, on which they recorded frequency counts for each behavioral category identified in Phase 1. A check mark was placed next to the behavior each time it was observed during the randomly designated time slot, and left blank if it was not observed. We used both inside and outside observers to increase the reliability and validity of the assessments (e.g., Judd et al., 1991).

Inside participant observers (e.g., secretaries, assistants, subordinates) used in this phase had maximum visual and audible contact with the target entrepreneur, as well as a good understanding of the functions and nature of the activities and observed behaviors of the entrepreneurs. Each entrepreneur was observed 80 times (one random time per hour over 2 weeks) by the inside participant, who worked closely with the entrepreneur, and at 20 random times by an

outside observer (a student from a local university helping with this research). The outside observers were responsible for conducting the 20 random observations simultaneously with the participant observers, which thus overlapped with the 80 insider observations. There was a qualitatively reported high level of inter-rater agreement, and any discrepancies were resolved as unobtrusively as possible on the spot.

Observer training

Both inside and outside observers were trained by the researcher for the structured observation phase. They were first given a detailed explanation of the study, after which the behavioral check list was distributed. The observers were next instructed in how to use the measurement instrument (the behavioral check list) and how to avoid potential problems. As in Phase 1, these participant observers were also given training on the 10 systematic errors commonly encountered in direct observations (Campbell, 1958; Thornton and Zorich, 1980). Finally, observers practiced direct observation through simulation exercises using realistic scenarios they would encounter. They worked on recognizing specific entrepreneurial behaviors, and on accurately placing them in the behavioral categories predetermined from Phase 1.

Results of Study 2

Phase 1: unstructured observation

Delphi analysis of the data gathered during the unstructured phase of the study yielded nine categories of entrepreneurial behaviors of this sample:

1.) planning;
2.) controlling;
3.) internal communication;
4.) human resource management;
5.) work-related tasks;
6.) customer service;
7.) socializing;
8.) politicking; and
9.) on-job personal time.

The definitions of each category and corresponding examples of observed behaviors are shown in Table 4.

The only behavioral factor that may have a different meaning from that in the US observational studies (Luthans et al., 1988) was networking. Instead of mostly non-work-related activities in the US (e.g., discussing sports), in this Central Asian context, networking was dominated by business-related visits and calls to government agencies and ministries. This can be explained by the remaining government bureaucracy from the Soviet Union days (Dowling et al., 1994) and the somewhat arbitrary administration of business legislation. We also found a large amount of administrative discretion available in the governmental agencies. For example, it was usual for entrepreneurs in our sample to spend several hours or even days waiting to see a government or bank official. They spent a lot of their time visiting different governmental agencies and resolving business matters in person. There was very little use of e-mail, and even the phone was not an effective alternative way to communicate owing to the work overload of the government agencies and their typically autocratic and bureaucratic culture. Visitors in government offices were often viewed as unwelcome solicitors or outsiders rather than customers, and phone calls were rarely returned.

Phase 2: structured observation

This phase of the study used the nine behavioral categories of entrepreneurial behaviors identified in the unstructured observation to determine their relative frequency and answer the research question: How frequently did these entrepreneurs engage in the behavioral activities identified in Phase 1? Results of this analysis are shown in Table 5.

Discussion of study 2

In Study 2, we examined two research questions:

1.) What observed behaviors do a sample of Kazakh and Kyrgyz entrepreneurs exhibit in their day-to-day activities?
2.) What is the relative frequencies of these observed behaviors?

Using idiographic methodology, we conducted direct unstructured and structured observations to answer these research questions. Unlike quantitative research, which depends on indirect, survey measures, this qualitative Study 2 used *in situ*, direct observational data. We feel that this was especially vital:

1.) to get away from anecdotal, news media accounts of entrepreneurs of this part of the world; and, moreover
2.) to provide comprehensive and valid behavioral data for further theory-building and application to the development of ESE found to be important to performance in Study 1.

No such research has yet examined entrepreneurial behaviors and their frequencies in transition economies in general, or in particular those in dynamic and hostile environments such as in Central Asia.

By demonstrating the importance of entrepreneurial self-efficacy, national leaders and educators can better understand the "why" and the "how" to stimulate effective entrepreneurial development in harsh, transition economies. The findings from Study 2 can also help open the door for development of specific ESE training programs in at least this part of the world. Vicarious learning and modeling can provide the theory-based mechanisms for efficacy training (Bandura, 2000; Gist, 1989; Luthans, 2002a, 2002b; Luthans and Youssef, 2004; Stajkovic and Luthans, 1998b) that would lead to an increase in ESE, which, as Study 1 suggests, may lead to improved performance outcomes.

Modeled behaviors

Principles of vicarious learning and modeling could be used as a training approach to enhance ESE in transition economies. Specifically, in this approach, trainers would convey behaviors relevant to entrepreneurial success and, based on those activities, proceed with building the trainees' ESE. Based on Bandura's (1986, 2000) research on self-efficacy training, which shows why we needed Study 2 (e.g., every step is based on knowing the actual behavioral activities to be performed), the following specific guidelines could be used in ESE training:

1.) nature and number of behaviors (what and how many activities are involved);

2.) sources of information cues for the behavioral activities (where needed information for the performance related behaviors could be found, for example, a price list for selling products);

3.) optimal sequencing requirements among behavioral activities (in what sequence the acts needed for optimal performance are to be executed, for example, greeting the customer first and then asking what they need);

4.) nature and frequency of temporal changes in the sequencing requirements among behavioral activities (determining whether sequencing among behavioral acts changes, and, if it does, how it changes for different circumstances, for example, changes in performance acts of an entrepreneur for different products and customers);

5.) necessary performance means (determining what technology is needed for successful execution of entrepreneurial behavioral activities).

Each of these steps would be first explained and enacted by the model (trainer, successful entrepreneur), whose performance is then replicated by the trainees in gradual fashion, step by step. The performance of the trainees would be monitored by the trainer and model. They would provide positive performance feedback. Mastering a modeled performance would enhance nascent entrepreneurs' beliefs about their capabilities to successfully execute the behaviors in the future. In essence, the training provides an enacted mastery experience, which positively influences subsequent ESE.

If resources are scarce for full-blown training programs (e.g., cost for trainers/models), vicarious learning can be fostered through the use of training videos featuring entrepreneurs who have succeeded in the same difficult environment. Modeling can also be implemented through student projects or contests resulting in awards and publicity for young entrepreneurs. Finally, after the training to enhance ESE, leaders/educators and economic development officials in these countries may use verbal persuasion and recognition awards (see Bandura, 2000) as a potentially effective approach for fostering ESE on a larger scale.

Although many international management scholars call for qualitative research to supplement quantitative studies (Butterfield et al., 1996; Delbecq et al., 1975; Luthans and Davis, 1982; Luthans and Morey, 1984; Miles and Huberman, 1984), few actually do it. Although the cost of this type of research can be substantial (in both time and resources), we suggest that further qualitative research in the international entrepreneur arena can be beneficial. In particular, building on our findings from the qualitative Study 2, future research may longitudinally examine what 'more successful' entrepreneurs do compared with 'less successful' ones, and whether those activities differ. Also, an

interesting avenue for future longitudinal qualitative research would be to examine whether entrepreneurial activities differ between successful entrepreneurs and those who have failed, further illuminating the relationship between specific entrepreneurial behaviors and performance outcomes. Finally, longitudinally examining and comparing entrepreneurial behaviors in the early stages of venture development as opposed to more mature enterprises would also be of interest.

Overall conclusions

By applying social cognitive theory and self-efficacy to entrepreneurship in transition economies in general, and harsh, hostile environments in particular, we feel that an increased understanding of the relationship among the environment, personal characteristics, behaviors, and performance outcomes can be gained. Entrepreneurship in the emerging market economies of post-communist countries has now been going on for about 15 years. Although the importance of ESE is widely acknowledged, unfortunately an understanding of it and, more importantly, doing something about it for successful performance, is still badly neglected.

The results of Study 1 suggest that the entrepreneurial process and resulting performance outcomes in transition economies, especially those in harsh, hostile environments such as Central Asia, may depend at least partly on systematic efforts toward recognizing and developing positive psychological capacities such as entrepreneurial self-efficacy. This ESE development, in turn, depends on knowing what entrepreneurs really do, as was found in Study 2. This is because, as Bandura (1986) puts it, nothing is as debilitating to successful human functioning as lack of knowledge regarding what needs to be done, and persistent self-doubt about it. Thus, the practical implication of the results found in these two studies is that the current state of entrepreneurial development in transition economies such as in Central Asia may be helped by taking a proactive, positive approach such as building entrepreneurial self-efficacy.

Table 1. Descriptive statistics and correlation matrix for all study variables.

Variable	$\bar{x}$	σ	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1 Entrepreneurial efficacy	10.52	1.79	—							
2 Sales growth	4.77	1.77	0.29	—						
3 Organizational effectiveness	3.23	0.58	0.29	0.13	—					
4 Profitability	4.17	1.20	0.21	0.31	0.27	—				
5 Environmental dynamism	3.86	1.27	0.01	0.06	-0.04	-0.03	—			
6 Environmental hostility	4.19	1.35	-0.09	-0.18	-0.25	-0.22	0.27	—		
7 Locus of control	31.31	4.50	0.22	0.22	0.12	0.21	-0.08	-0.25	—	
8 Need for achievement	6.07	1.07	0.75	0.23	0.32	0.27	-0.92	-0.20	0.43	—

N=133

Table 2. Covariance input matrix and variances for all study variables.

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1 Entrepreneurial efficacy	3.29							
2 Sales growth	0.94	3.09						
3 Organizational effectiveness	0.31	0.14	0.34					
4 Profitability	0.46	0.65	0.19	1.43				
5 Environmental dynamism	0.01	0.13	-0.03	-0.05	1.57			
6 Environmental hostility	-0.21	-0.41	-0.19	-0.36	0.46	1.77		
7 Locus of control	1.79	1.91	0.3	1.1	-0.45	-1.51	19.94	
8 Need for achievement	1.47	0.43	0.20	0.35	-0.02	-0.28	2.08	1.17

N=133. Variances (covariance of a variable with itself) are shown on the diagonal.

Table 3. Assessment of the data normality.

Variable	*Min.*	*Max.*	*Skewness*	*c.r.*	*Kurtosis*	*c.r.*
(1) Entrepreneurial efficacy (1–14 scale)	4.74	13.52	-0.81	-3.66	0.54	1.22
(2) Locus of control (22–42 scale)	24.00	44.00	-0.11	-0.48	-0.38	-0.86
(3) Need for achievement (1–9 scale)	3.47	8.91	0.05	0.24	-0.18	-0.41
(4) Environmental dynamism (1–7 scale)	1.00	7.00	-0.14	-0.65	0.12	0.27
(5) Environmental hostility (1–7 scale)	1.00	7.00	-0.14	-0.64	-0.24	-0.55
(6) Organizational effectiveness (1–5 scale)	1.67	4.56	0.05	0.22	-0.01	-0.02
(7) Sales growth (1–8 scale)	1.00	8.00	0.16	0.72	-0.42	-0.94
(8) Profitability (1–7 scale)	1.00	7.00	-0.50	-2.27	1.28	2.90
Multivariate					2.83	1.25

Min.=minimum values; Max.=maximum values; c.r.=critical region.

Table 4. Entrepreneurial behavioral activities, definitions, and observed examples.

Behavioral activity	*Definition*	*Examples of observed behaviors*
Planning	Formulating objectives and determining what should be done to accomplish them	Scheduling appointments, prioritizing projects, discussing strategies
Controlling	The process of monitoring the actual situation and/or performance and taking action to ensure the desired results	Checking the work done, monitoring financial progress, and inspecting the state of the equipment
Internal communication	A process of sending and receiving information between the entrepreneur and other people within the organization	Talking with employees or a business, partner attending meetings, receiving phone messages
Human resource management	The process of staffing the organization with human resources, and ensuring that the performance level of every employee is realized	Training employees, reinforcing employees, motivating employees, delegating to employees
Work-related tasks	Performing activities that are of central concern to the business itself	Filing invoices, organizing work area, pricing merchandise
Customer service	A process of sending and receiving information between the entrepreneur and the customer which increases the customer's ability to realize the potential value of the product or service offered	Explaining the product or service to customers, quoting prices to customers, selling products, handling customer complaints
Socializing	A process of sending and receiving information between the entrepreneur and one or more outside parties for the purpose of getting to know each other better	Socializing with suppliers, bankers, customers, and other business partners and chit-chatting about relevant social events
Politicking	A process of sending and receiving information between the entrepreneur and one or more outside parties for the purpose of obtaining preferential treatment	Calls to government offices, lobbying elected officials, discussing political issues related to business
On-job personal time	Performing activities during working hours that are not central to the business itself	Talking with family and friends, reading newspaper, and watching TV for pleasure

Table 5. Frequencies of observed behavioral activities in both countries.

Activities	*Kazakhstan Relative (%) frequency*	*Kyrgyzstan Relative frequency (%)*
Planning	8.8	8.2
Controlling	9.7	9.4
Internal communication	15.3	16.6
Human resource management	7.5	7.8
Work-related tasks	19.6	18.4
Customer service	15.4	15.2
Socializing	8.5	9.3
Politicking	2.6	2.5
On-job personal time	12.7	12.5

Acknowledgments — We thank Professor Mary Ann Von Glinow and three anonymous *JIBS* reviewers for their suggestions. We also thank Professor Alex Stajkovic for his help on the analysis in Study 1.

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