

# *The Journey from Novice to Serial Entrepreneurship in China and Germany: Are the Drivers the Same?*

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While in general entrepreneurs in emerging economies are significantly different from entrepreneurs in mature markets on most dimensions, serial entrepreneurs demonstrate certain similarities in their goals and motivations, skills and competencies, resources, strategies and other characteristics. The drivers governing the journey from novice to serial entrepreneurship – while consistent with the arguments advanced by Casson and Lazear – appear to differ somewhat between emerging and mature economies. Based on a cross-sectional survey of Chinese and German entrepreneurs, the study contributes to the understanding of entrepreneurship in emerging markets and extends the knowledge of serial entrepreneurship by analyzing whether the differences between serial and novice entrepreneurs can be attributed to the types of skills and competences possessed by the individuals, and whether particular motives for starting new ventures are more conducive to multiple business founding than others.

*Key Words:* serial entrepreneurship, emerging economies, China, Germany

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## **Introduction**

Entrepreneurship is the main vehicle of economic development. Serial entrepreneurship is its quintessential core. What makes certain individuals but not others start multiple businesses (sometimes simultaneously)

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is an intriguing question. Only recently has this question drawn empirical attention, and the results to date are still modest although promising. Existing literature attempts to explain the differences with the types of start-up activities carried out during the gestation processes by nascent entrepreneurs, their behavior patterns, personal backgrounds, experiences, and resources under control (Alsos and Kolvereid 1998; Rosa 1998; Ucbasaran, Wright, and Westhead 2003; Van Osnabrugge 1998; Westhead, Ucbasaran, and Wright 2003; Westhead and Wright 1998; Wright, Robbie, and Ennew 1997).

We extend these studies by suggesting that further selection of novice entrepreneurs into serial/habitual entrepreneurs may be a function of particular skill levels and competencies. Based on the arguments of Casson (1982) and Lazear (2004), we hypothesize that entrepreneurs with above-average levels of general skills such as in negotiating, presentation and idea generation are more likely to start multiple ventures whereas possessing above-average levels of functional skills, for instance in finance or marketing, would have no noticeable (or have a negative) effect on the probability of becoming a serial entrepreneur. While prior literature has also suggested the importance of particular motives in the individual's decision to pursue an entrepreneurial occupation, relatively little is known about particular individual goals of the serial entrepreneur. We acknowledge the likelihood of differences in individual motives between novice and serial entrepreneurs while leaving the directionality of such differences to empirical investigation.

In international comparisons it must be taken into account that the individuals' characteristics, inclinations and motivations – such as proclivity to start-up – are influenced by the institutional and cultural background of the entrepreneurs' country of origin (Hunt and Levie 2003; George and Zahra 2002; Hofstede 2001; Busenitz and Lau 1996). According to intercultural entrepreneurship research studies (Hayton, George, and Zahra 2002), behavioristic phenomena like attitudes and motivations are culture-specific, so that cross-cultural comparisons are either aimed at inter-culturally valid phenomena, or require a context-dependent result interpretation. This holds true especially for a cross-sectional comparison between entrepreneurs in mature and emerging markets, where institutional differences and their impact on human skills and competencies are perhaps most salient. In this study, we account for the entrepreneur's country of origin when testing factors capable of affecting a novice entrepreneur's decision to move on to another venture,

and also of developing a better understanding of the particularities of the entrepreneurial processes in emergent markets. Chinese entrepreneurs are compared to their German counterparts (including separate comparisons to East and West Germany) on a number of dimensions covering a wide institutional range from the developing economy in China to the highly developed economy in Germany, including the still in transition after the reunification of the Old and the New Laender economy of East Germany.

### **Background and Hypotheses**

The background and hypothesis will review the relevant research findings as an introduction to the development of the specific hypothesis to be tested.

#### REVIEW OF THE RELEVANT FINDINGS

There are different definitions of multiple or habitual entrepreneurship (Starr and Bygrave 1991; Kolvereid and Bullvag 1993; Birley and Westhead 1994; Hall 1995). Following Westhead and Wright (1998) we define habitual or multiple entrepreneurs as those owners-managers of businesses who have either founded, purchased or inherited more than one venture, either sequentially (serial entrepreneur) or simultaneously (portfolio entrepreneur). Novice entrepreneurs on the other hand, are those individuals that have no previous entrepreneurial experience as founders, purchasers or inheritors of a business.

Following MacMillan's (1986) call to study serial entrepreneurs in order to learn more about entrepreneurship, a stream of research has focused upon several aspects of this phenomenon. So far there is growing empirical evidence that multiple entrepreneurs do not constitute a homogeneous group in many respects (Ucsbasaran, Wright, and Westhead 2003). Regarding their motivations, there are two interesting issues. First, although there is a considerable diversity among habitual entrepreneurs, a pattern does seem to emerge. Serial entrepreneurs have been found to be more concerned with personal development and pursuit of an idea for a product (in some cases following a family tradition) than portfolio entrepreneurs. Portfolio entrepreneurs, on the other hand, tend to report more often the need for security and have an instrumental view of some of the ventures in their portfolios, which were started in order to benefit from tax exemptions. Novice and portfolio entrepreneurs seemed to be more reactive, i. e. they reported more often than serial entrepreneurs

'the exploitation of an opportunity that appeared' as a motivation. The second interesting issue is that motivations of habitual entrepreneurs seem to change between the first and subsequent venture. While first ventures have been found to be motivated by financial considerations, second ventures have been found to be motivated by more personal reasons (continue the challenge of owning a successful venture) and by security considerations (reduce risk exposure, take advantage of tax exemptions). There is no clear evidence that novice, serial and portfolio entrepreneurs differ in terms of their 'growth orientations' and 'materialistic reasons' (Rosa 1998; MacMillan 1986; Wright, Robbie, and Ennew 1997).

Ucbasaran, Wright and Westhead (2003) report a considerable motivational diversity among habitual entrepreneurs. The desire to work independently was mentioned by every entrepreneur in this study as a motivation for the first venture and remained as the most frequently reported motivation for subsequent ventures. Financial motivation was emphasized especially in the case of first ventures. This held not only for different types of entrepreneurs but also for each type over time. Regarding subsequent ventures, more personal reasons were given as motivation to start new businesses, such as the desire to continue the challenge of owning a successful venture. Starter entrepreneurs were more likely than acquirer entrepreneurs to strive for independence and autonomy. Habitual starter entrepreneurs were also more likely to be proactive searchers of business opportunities, whereas acquirers, who stressed the importance of networks, tended to be more reactive and used the networks as the providers of business opportunities. Motivations were also found to vary with the type of venture owned by habitual entrepreneurs. Westhead, Ucbasaran and Wright (2003) provide support that habitual, either serial or portfolio entrepreneurs are more likely than novice entrepreneurs to stress organizational routines oriented towards innovation, growing the business and professional management. Portfolio entrepreneurs were more likely to focus upon managerial competence and human capital resources. They were also more likely to show higher levels of competences that provide a greater understanding of why and how they own several businesses at the same time.

Westhead and Wright's (1998) novice entrepreneurs were more likely than serial entrepreneurs to be motivated by the 'need of independence' and they were more likely than portfolio entrepreneurs to have reported the 'need for approval' as a motivation to start a venture. However, they

were less likely than habitual entrepreneurs to have started a business to 'continue a family tradition' ('follow role models'). Habitual founders were more likely than novice founders to have emphasized 'perceived instrumentality of wealth' and 'need for personal development' as reasons for start-up. Portfolio founders were on the other hand, more likely than novice and serial founder to stress 'security' ('perceived instrumentality of wealth') and 'to have access to indirect benefits such as tax exemptions'. Serial founders were more likely than novice entrepreneurs to be motivated by the willingness to 'develop an idea for a product' ('need for personal development'). However, they were less likely than the others to have reported 'to have more influence in my community' as a reason for starting a venture. Westhead and Wright do not find support for the hypothesis that portfolio and serial founders were more growth oriented than novice founders. Birley and Westhead (1994) found that multiple (portfolio and serial) entrepreneurs were more likely than novice entrepreneurs to emphasize materialistic reasons for starting a venture, whereas Westhead and Wright (1998) found that portfolio founders were more likely than serial founders to have stated this reason. They provide further support that habitual entrepreneurs can not be treated as a homogeneous group.

Rosa (1998) determined that the process of multiple business ownership is an entrepreneurial one. According to his research, subsequent new ventures were not typically driven by managerial considerations alone. Even when some founding was motivated by the need to exploit tactical advantages or to deal with financial difficulties, entrepreneurial added value was always involved. Regarding the construction of generic types of entrepreneurs, Rosa felt that the diversity often exhibited by entrepreneurs over time in terms of their motivations and strategies for starting each new venture makes it difficult to construct a typology of habitual entrepreneurs. He does not find clear evidence to support the construction of a mapping from homogeneous types to entrepreneurial behavior.

Wright, Robbie and Ennew (1997) postulate that there are no obvious reasons to expect the motivations, personal characteristics and behavior of serial founders to be less diverse than those of novice founders. The motivations stated by the subjects in their study ranged from the desire for independence and autonomy, frustration with the present job to a sense of duty and the desire for wealth creation. Motivations are also found to change over time. For instance, in cases where monetary gain was perceived as an important factor in the first venture, it was consid-

ered less important in the second. The desire for a challenge and/or to develop an idea was very strong in the case of second and subsequent ventures. The desire to reduce the exposure to financial risk was present as well. And even if entrepreneurs committed a smaller proportion of their personal wealth in subsequent ventures, they emphasized the importance of being personally committed to them. This study also found that previous entrepreneurial experience influenced the way in which subsequent ventures were undertaken. For instance, some individuals were reluctant in further ventures to risk their reputation as successful entrepreneurs.

Empirical studies have failed so far to identify significant differences in performance between novice and multiple founders and between the two types of habitual founders (Kolvereid and Bullvag 1993; Wright, Robbie, and Ennew 1997; Westhead and Wright 1998). Rosa (1998) also asserts that it is empirically open and unresolved how far aggregate value (i. e. the sum of all employment, sales turnover, and capital assets) in the cluster of firms created by habitual entrepreneurs outperforms that of the single firm entrepreneurs.

Regarding the lack of conclusive findings, Westhead and Wright (1998) indicate that 'there is a need to take note of the heterogeneity of types of entrepreneur and to consider the entrepreneur as the appropriate unit of analysis rather than simply the firm'. They also assert that further research should focus upon the entrepreneur as a unit of analysis to allow a better understanding of the nature and contribution of entrepreneurship. They claim that 'the organization should not be the sole unit of analysis, because some entrepreneurs attempt to resolve their personal materialistic aspirations through the growth of a portfolio of businesses' (Birley and Westhead 1994). MacGrath (1999) and Sarasvathy and Menon (2002) confirm this when they suggest that firms have an instrumental role in the career of an entrepreneur. Rosa (1998) also asserts that the snap shot approach of just comparing the latest (habitual) and new venture (the novice) is incomplete and can lead to premature evaluation of the relative contribution of these types of entrepreneurs to economic development.

Cultural particularities can also help explain differences in entrepreneurial activities (McClelland 1961). To grasp the cultural context on a national level (Ulijn and Brown 2004; Ulijn and Fayolle 2004) most studies draw on Hofstede's cultural concept (Hofstede 2001). Following Hofstede's definition of culture as the 'collective programming of the mind which distinguishes the member of one human group from another'

(Hofstede 1991, 5), the cultural context can be seen as a sounding board for entrepreneurship by predisposing entrepreneurial behavior psychologically via attitudes, beliefs and the motivation of the entrepreneur and sanctioning entrepreneurial activities socially via common shared values and norms within a society (Hunt and Levie 2003). Hayton, George, and Zahra (2002) identify in a meta-analysis a positive impact of Hofstede's cultural dimensions on entrepreneurship in high levels of individualism and masculinity and low levels of power distance and uncertainty tolerance. Though the latter provides a direct link to human resources in emerging and mature markets, recent literature indicates that Hofstede's cultural dimensions were developed for established companies and are not specific enough for new ventures (Busenitz, Gomez, and Spencer 2000). These recent studies (Busenitz and Lau 1996; Tan 2002) suggest a separation of the cultural background and cognitive dispositions and human characteristics for a better understanding of their impact on entrepreneurial behavior. Following the results of this research, goals and motivation, skills and competencies are considered in this study as endogenous and the cultural context as an exogenous determinant of serial entrepreneurship.

#### HYPOTHESES DEVELOPMENT

The hypotheses concerning differences between serial and novice entrepreneurs attributed to the types of skills and competences possessed by the individuals are based, in part, on the arguments of Casson (1982) and Lazear (2004).

Casson (1982) defines an entrepreneur as somebody who specializes in taking judgmental decisions about the coordination of scarce resources and proposes a set of skills required by decision making. These consist of self-knowledge (or knowledge of the principal's objectives), imagination, practical knowledge, analytical ability, search skill, foresight, computational skill and communication skill (in formulating instructions). Casson infers that the entrepreneur needs to be more a generalist rather than a specialist and formulates that it is important to be reasonably good at all aspects of decision making instead of being very good at some and bad at others. However, not all of these qualities are equally important, nor are they equally distributed among the population. Those unequally distributed will have a considerable economic importance and will be peculiar to the entrepreneur. Some of these skills are almost innate, such as imagination, but most are capable of enhancement, either by training

or experience. The crucial point is that somebody who wants to become an entrepreneur will have to be proficient in many aspects (or extremely good at delegating and organizing).

Lazear (2004) offers a model explaining why this may indeed be the case. He first assumes that people are endowed with some basic talents regarding two<sup>1</sup> different skills and that they can augment these by acquiring certain types of human capital. He then introduces two types of income functions that he assigns respectively to specialists and entrepreneurs. These functions are mappings from skills to income. The income of the specialists equals the value of the skill with the highest level. The income of the entrepreneurs on the other hand, is determined by the value of the skill with the lowest level. Investment in human capital to augment the skill levels is costly.<sup>2</sup> If individuals are born with different levels of talent concerning both skills, then for different arrangements of the parameters, depending on whether they have the income function of a specialist or that of an entrepreneur, they may adopt different investment strategies. Individuals, who have the income function of a specialist, have an incentive to invest in one of the skills to maximize returns. On the other hand, individuals who have the income function of an entrepreneur, have an incentive to invest in this skill up to the level of the other and afterwards they optimize by investing in human capital to reach a similar level of talent in both skills.<sup>3</sup> Because investment in human capital is costly and the cost function is convex, there will be a limit to the optimum level of skills and therefore a limit to the increment of income derived from them. We hypothesize that serial entrepreneurship can provide a way to boost this process.

To summarize these thoughts we agree with Casson (1982) that self-selection into entrepreneurship could be a function of skills and competences possessed by an individual. In particular, individuals with general, not functional skills are more likely to start new businesses; those with high functional skills (e. g. finances) are more likely to choose professional careers. In terms of Lazear's (2004) statements that entrepreneurs are expected to have a more balanced set of skills than non entrepreneurs, and that serial entrepreneurs can be seen as novice entrepreneurs who are committed to the career, we extend these arguments by suggesting that further selection of novice entrepreneurs into serial/habitual entrepreneurs may be a function of the levels of particular skills and competencies. In particular, we hypothesize that entrepreneurs with above-average levels of general skills (e. g. oral presentation, writing ability, idea gener-

ation) are more likely to start multiple ventures whereas above-average levels of functional skills (e. g. human resource management, finance, marketing) would have no noticeable (or ever have a negative) effect on the probability of becoming a serial entrepreneur. Thus, our two main hypotheses are:

- H1 *Novice entrepreneurs with higher levels of general skills are more likely to start multiple ventures.*
- H2 *Novice entrepreneurs with higher levels of functional skills are less likely (or not significantly more likely) to start multiple businesses.*

Prior literature – as shown in the background review (Ucbasaran, Wright, and Westhead 2003, Westhead and Wright 1998; Wright, Robbie, and Ennew 1997) – has also suggested the importance of particular motives in the individual's decision to pursue an entrepreneurial occupation. At the same time, relatively little is known about particular individual goals in the serial entrepreneurship context. We acknowledge the likelihood of differences in individual motives between novice and serial entrepreneurs while leaving the directionality of such differences to empirical investigation leading to the following hypothesis:

- H3 *Entrepreneur's goals and motives significantly differ between novice and serial entrepreneurs.*

To address the impact of the cultural environment on the role of human resources in entrepreneurial ventures, we control for the country of origin. Previous literature – as shown above (Hunt and Levie 2003; George and Zahra 2002; Hofstede 2001; Busenitz and Lau 1996) – indicates apparent cultural differences between entrepreneurs in transition and developed economies. Accordingly, since cultural environment is looked at in the literature as an exogenous component affecting entrepreneurship, we expect 'average' entrepreneurs in emerging and mature economies to demonstrate significant differences on most characteristics and attributes. At the same time, as we conceptualize serial entrepreneurs as 'ultimate venturers' committed to their entrepreneurial careers and having comparably composed sets of skills and competencies regardless of their national origin, we expect serial entrepreneurs to demonstrate significantly more similarities with respect to their characteristics and attitudes such as motivations, strategies, and resources. These results are reflected in the final two hypotheses:

- H4 *Most characteristics and attitudes significantly differ between Chinese and German entrepreneurs.*

- H5 *Compared to ‘average’ entrepreneurs, serial entrepreneurs in China and Germany show more similarities with respect to their motivations, strategies, characteristics and resources.*

To test these hypotheses, the following methodology was applied.

### **Methodology**

The methodology will be discussed in terms of the data, the variables, and the data analysis methods. The data of our hypotheses are tested based on cross-sectional data collected in Germany and China. The questionnaire used was based on a previously validated instrument originally developed by Hisrich and his co-authors and used in a number of studies in a range of economies including Israel, Russia, Ukraine, and the United States (Hisrich and Grachev 1995; Lerner, Brush, and Hisrich 1997). It was translated into German and Chinese and administered to German and Chinese entrepreneurs. The list of questions used is available from the authors. Out of 315 returned questionnaires (seventy percent from Germany and thirty from China), 39 were deemed unusable since respondents indicated their position as managerial rather than entrepreneurial resulting in a final sample of 276 responses.

82.1 percent of Chinese entrepreneurs in the sample were males compared to 75.0 percent in Germany. The age of Chinese entrepreneurs varied from 24 to 55 years with the mean being 37. German entrepreneurs were five years older on average (42) with reported age varying from 27 to 63 years. 10.0 percent of German entrepreneurs reported having started more than one venture (serial entrepreneurs) compared to 12.5 percent in China.

### VARIABLES

Our dependent variable – serial entrepreneur – was coded 1 if the entrepreneur indicated that the current business was not his first entrepreneurial venture and coded 0 otherwise. We tested 25 independent variables as potential predictors of becoming a serial entrepreneur. In particular, we examined 10 items of the entrepreneur’s goals/motivations (personal achievement, status and prestige, economic necessity, flexibility in work/family, independence, learning and personal growth, desire to test one’s own ideas, money and wealth, recognition, and satisfying work relationships); 8 items of functional skills (finance, human resource management, marketing, operations, organizing and planning, problem analysis/solving, information systems, technology); and 7 items

of general competencies (negotiating, idea generation, oral presentations, writing ability, quantitative competencies, motivating employees, developing personal business relationships). We included entrepreneurs' age, gender and country of origin dummies as controls. For the cross-cultural comparison between Germany (East and West) and China, 4 items in job satisfaction, 20 items in resources, 11 items in strategy and 10 items in industry characteristics were included.

#### DATA ANALYSIS METHOD

Descriptive statistics and bivariate correlations are presented in table 1. Given the binary coding of the dependent variable, the most appropriate estimation technique is binary logistic regression (models 1–4, table 2). Model 1 only includes control variables. Model 2 adds entrepreneurs' goals and motivations to the set of predictors. Model 3 builds on model 2 by adding general competencies to the equation, and model 4 augments the set of predictors with functional skills.

We acknowledge that due to the limited sample size, a relatively small proportion of serial entrepreneurs in the sample, and substantial number of independent variables, we may not achieve statistical significance for some coefficients even if the proposed relationships hold true. Nevertheless, we were reluctant to deliberately oversample particular groups of individuals (serial entrepreneurs) so as not to distort the underlying properties of the sampled population. Instead, we resorted to a non-parametric resampling technique known as bootstrap to check whether relationships reported by the logistic regression as significant are a mere artifact of the sample size or reflect true properties of the data at hand (Bollen and Stine 1992; Efron and Gong 1983; Stine 1985). By doing so we make an assumption that our sample is representative of the overall population, which appears to be the case. Otherwise, the bootstrap results are only generalizable to this particular sample. To arrive at bootstrap estimates, 250 random samples were drawn with replacement from the original dataset (that is, some observations are likely to appear in more than one sample) each of which is used to re-test our initial model. The resulting coefficients for each regression are then averaged over the 250 regression runs. The standard deviation of each coefficient is then divided by the square root of the sample size to arrive at the standard error of the mean. A *t*-value is then estimated for each coefficient by comparing the coefficient's average to its standard error. Bootstrap estimates are only used to confirm the relationships rendered as significant

TABLE 1 Descriptive statistics

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	.10	.30												
2	4.28	.90	-.01											
3	2.96	1.15	.10	.20										
4	3.93	.98	-.07	.13	.13									
5	3.95	1.05	-.03	.13	.14	.04								
6	4.26	.88	.00	.16	.18	-.03	.40							
7	4.03	.84	-.12	.35	.15	.04	.19	.24						
8	3.93	.92	.05	.34	.16	-.10	.06	.14	.39					
9	3.51	.98	.00	.19	.41	.14	.05	.15	.05	.14				
10	3.65	.99	.01	.27	.47	.14	.09	.23	.28	.20	.29			
11	4.04	.88	-.09	.18	.11	.05	.26	.22	.28	.20	.00	.31		
12	3.08	1.08	.07	.03	.11	.00	.09	.09	-.02	-.08	.02	.10	-.03	
13	3.74	.85	-.04	.21	.03	.05	.07	.21	.28	.15	.04	.19	.07	.15
14	3.28	1.06	.05	.13	.10	-.13	-.02	.02	.14	.19	.09	.11	-.02	.12
15	3.43	1.20	.02	.13	.08	-.13	-.02	.01	.16	.36	.09	.05	.00	.05
16	3.51	1.06	.02	.08	.06	-.06	.00	.06	.11	.16	.16	.09	.05	.07
17	3.68	1.89	.01	.15	.01	-.04	.06	.10	.05	.18	.07	.12	.04	.05
18	3.03	1.25	.09	.09	.06	.09	-.04	.10	.12	.06	.08	.01	-.04	.08
19	3.08	1.27	.02	.14	-.02	.15	-.03	.01	.14	.08	.12	-.06	-.09	-.04
20	3.36	.80	.12	.19	.16	-.04	.03	.11	.10	.16	.12	.21	.05	.06
21	3.55	.76	.17	.11	.14	-.10	.00	.11	.02	.07	.06	.10	.00	.05
22	3.25	.87	.10	.16	.03	-.05	.06	.22	.20	.10	.05	.08	-.05	.16
23	3.55	.83	.01	.12	.09	-.06	-.11	.04	.04	.09	-.03	.04	-.06	-.01
24	3.30	.88	.08	.06	-.03	-.08	-.03	.08	.00	.01	.08	-.04	.00	.21
25	3.34	.77	.03	.19	.07	.14	-.07	.07	.14	.13	.18	.12	-.04	-.07
26	3.40	.98	.01	.09	.23	.08	-.04	.10	.06	.12	.15	.16	-.08	.01
27	40.80	7.88	.05	.06	-.19	.11	-.08	-.06	-.16	-.04	-.11	-.17	-.04	.10
28	.76	.43	.08	-.01	.01	-.11	-.12	.01	-.11	.05	.08	-.15	-.08	-.07
29	.19	.40	.05	-.01	.21	.00	-.15	.01	.06	.18	.17	.20	-.15	.11

NOTES 1 – serial entrepreneur, 2 – personal achievement, 3 – status and prestige, 4 – economic necessity, 5 – flexibility in work/family, 6 – independence, 7 – learning and personal growth, 8 – test my own ideas, 9 – money and wealth, 10 – recognition, 11 – satisfying work relationships, 12 – finance, 13 – human resource management, 14 – marketing, 15 – idea generation, 16 – operations, 17 – organizing and planning, 18 – managing information systems, 19 – technology,

*Continued on the next page*



TABLE 2 Regression results (dependent variable – serial entrepreneur)

Variable or statistic	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<i>Functional skills</i>							
Finance				0.16 (0.26)			
Human resource management				-0.65 <sup>a</sup> (0.37)	Yes	Yes	
Marketing				0.28 (0.29)			
Operations				-0.01 (0.28)			
Organizing and planning				-0.20 (0.36)			Positive <sup>a</sup>
Problem analysis/solving				-0.77 <sup>b</sup> (0.36)	Yes	Yes	
Managing information systems				0.59 <sup>b</sup> (0.29)	Yes	Yes	Negative <sup>b</sup>
Technology				-0.27 (0.27)			
<i>General Competencies</i>							
Negotiating			0.30 (0.34)	0.28 (0.37)			
Idea generation			-0.08 (0.19)	-0.24 (0.24)			
Oral presentation			0.71 <sup>a</sup> (0.38)	1.01 <sup>b</sup> (0.43)	Yes	Yes	Positive <sup>a</sup>
Writing ability			0.27 (0.25)	0.55 <sup>a</sup> (0.31)	Yes	Yes	
Quantitative competence			0.11 (0.25)	0.14 (0.31)			
Motivating employees			0.28 (0.38)	0.55 (0.47)			
Developing personal business relationships			-0.44 (0.29)	-0.65 <sup>b</sup> (0.32)	Yes	Yes	
<i>Goals and Motivations</i>							
Personal achievement		0.07 (0.28)	0.00 (0.30)	0.27 (0.35)			
Status and prestige		0.42 <sup>a</sup> (0.26)	0.54 <sup>a</sup> (0.28)	0.45 (0.28)			Positive <sup>a</sup>

*Continued on the next page*

TABLE 2 Continued

Variable or statistic	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Economic necessity		-0.34 (0.271)	-0.21 (0.26)	-0.23 (0.28)			
Flexibility in work/family		0.06 (0.29)	0.03 (0.24)	-0.01 (0.25)			Positive <sup>a</sup>
Independence		-0.01 (0.27)	-0.04 (0.29)	-0.10 (0.31)			
Learning and personal growth		-0.43 (0.29)	-0.51 <sup>a</sup> (0.31)	-0.73 <sup>b</sup> (0.36)	Yes	Yes	Negative <sup>a</sup>
Test my own ideas		0.23 (0.28)	0.34 (0.30)	0.50 (0.35)			
Money and wealth		-0.23 (0.26)	-0.31 (0.28)	-0.35 (0.32)			
Recognition		0.05 (0.31)	0.05 (0.33)	0.22 (0.37)			
Satisfying work relationships		-0.36 (0.26)	-0.45 <sup>a</sup> (0.27)	-0.52 <sup>a</sup> (0.32)	Yes	Yes	Negative <sup>b</sup>
<i>Controls</i>							
Age		0.03 (0.03)	0.02 (0.03)	0.03 (0.03)	0.02 (0.03)		
Gender		0.63 (0.56)	0.36 (0.60)	0.43 (0.63)	0.59 (0.69)		
China		0.46 (0.49)	0.09 (0.56)	-0.24 (0.62)	-0.40 (0.72)		
Constant		-3.96 <sup>c</sup> (1.21)	-1.27 (2.27)	-5.27 <sup>a</sup> (2.75)	-3.59 (3.08)		
Nagelkerke R <sup>2</sup>		0.02	0.11	0.20	0.28		
Change in R <sup>2</sup>		-	0.09	0.09	0.08		

NOTES Column headings are as follows: (1) model 1, (2) model 2, (3) model 3, (4) model 4, (5) relationship confirmed – 100 runs bootstrap, (6) relationship confirmed – 250 runs bootstrap, (7) interaction with ‘China’. Standard errors in parentheses. <sup>a</sup>  $p < 0.10$ , <sup>b</sup>  $p < 0.05$ , <sup>c</sup>  $p < 0.01$ , <sup>d</sup>  $p < 0.001$ .

by the initial logistic regression and are not used to claim support for our hypotheses if only the bootstrapped but not the initial results show significance. Two columns in table 2 indicate whether or not model 4 results are confirmed by the bootstrap testing based on 100 and 250 random samples.

To obtain a better understanding of different characteristics and atti-

tudes of Chinese entrepreneurs, we also compare them to the subsamples of West and East Germany-based entrepreneurs. These comparisons were made for the broad population of average entrepreneurs and for the smaller group of serial entrepreneurs (see table 3). For the latter the last column in table 2 indicates a positive or negative interaction of the results in models 1–4 with China country membership. Table 3 shows the extended analysis of differences among average and serial entrepreneurs from China, East and West Germany. In addition to comparing the above mentioned goals and motivations, skills and competencies, we include several items on job satisfaction, resources, strategy and industry characteristics into consideration to fully illustrate the differences between emerging and mature environments within which entrepreneurs operate.

### **Findings**

The findings are mostly based on model 4, our main model. As suggested by the Hosmer and Lemeshow test, binary logistic regression fits the data adequately. The  $\chi^2$  of 12.14 is not significant ( $p = .15$ ), indicating acceptable fit. The Nagelkerke  $R^2$  is .28, and overall the model correctly classifies 90.7% of entrepreneurs. The large number of different measures of entrepreneur's motivations and competencies can potentially create a multicollinearity problem. However, the diagnostics did not reveal any indications of this problem; the largest VIF is only 2.07. The highest correlation between independent variables is .52 between two general competences (motivating employees and developing personal business relationships), which is well below the .7 threshold. Since our study employs a cross-sectional design with the answers being self-reported, there is a potential threat of a common method bias. If this were the case, such bias would have manifested itself in the correlation table, and the observed correlation between theoretically uncorrelated constructs would have reflected it. Since the smallest correlation is .00, this implies that even if the common method bias is present, its magnitude is negligible.

As our results indicate, general skills are successful in explaining the probability of a novice entrepreneur becoming a serial entrepreneur. Thus, both superior oral presentation and writing ability are positively associated with the start of multiple future ventures by a novice entrepreneur.<sup>4</sup> This lends support to hypothesis 1. Negotiating, quantitative competence, and employee motivating skills do not differentiate novice from serial entrepreneurs. Contrary to our expectations, a com-

TABLE 3 Means comparison: China to Germany; China to West Germany; China to East Germany

	Entrepreneurs				Serial entrepreneurs			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
<i>Goals and motivations</i>								
Personal achievement	4.27	4.28	4.43	4.20	4.08	4.27	4.50	4.14
Status and prestige	3.41	2.84 <sup>c</sup>	2.81 <sup>b</sup>	2.87 <sup>c</sup>	3.62	3.05 <sup>a</sup>	3.38	2.85 <sup>b</sup>
Economic necessity	3.91	3.93	4.17	3.78	3.77	3.68	3.75	3.64
Flexibility in work/family	3.66	4.03 <sup>b</sup>	4.04 <sup>a</sup>	4.02 <sup>b</sup>	3.72	3.86	4.25	3.64
Learning and personal growth	4.16	4.01	4.13	3.96	4.00	3.86	4.25	3.64
Test my own ideas	4.29	3.85 <sup>c</sup>	3.72 <sup>c</sup>	3.92 <sup>c</sup>	4.08	4.05	4.25	3.93
Money and wealth	3.86	3.42 <sup>c</sup>	3.19 <sup>c</sup>	3.53 <sup>b</sup>	3.87	3.23 <sup>b</sup>	2.88 <sup>b</sup>	3.43
Recognition	4.05	3.55 <sup>c</sup>	3.68 <sup>b</sup>	3.45 <sup>d</sup>	4.00	3.55	3.75	3.43
Satisfying work relationships	3.79	4.11 <sup>b</sup>	4.09 <sup>a</sup>	4.11 <sup>b</sup>	3.90	4.00	3.88	4.07
<i>Skills and competencies</i>								
Finance	2.86	3.14 <sup>a</sup>	3.22 <sup>a</sup>	3.10	3.21	3.23	3.13	3.29
Dealing with people	3.61	3.77	3.87	3.71	3.41	3.64	4.00	3.43
Marketing	3.68	3.17 <sup>c</sup>	3.20 <sup>b</sup>	3.16 <sup>c</sup>	3.46	3.32	3.75	3.07
Idea generation	3.73	3.37 <sup>b</sup>	3.30 <sup>a</sup>	3.41 <sup>a</sup>	3.54	3.50	3.38	3.57
Operations	3.38	3.53	3.32	3.59	3.44	3.43	3.71	3.29
Organizing and planning	3.73	3.64	3.64	3.67	3.46	3.72	4.14	3.46
Managing information systems	3.59	2.86 <sup>d</sup>	2.85 <sup>c</sup>	2.86 <sup>d</sup>	3.59	3.36	3.25	3.43
Technology	3.39	3.00 <sup>b</sup>	2.96 <sup>a</sup>	3.00 <sup>b</sup>	3.51	3.05	3.25	2.93
Negotiating	3.80	3.24 <sup>d</sup>	3.30 <sup>c</sup>	3.23 <sup>d</sup>	3.74	3.45	3.75	3.29
Oral presentation	3.86	3.46 <sup>d</sup>	3.60 <sup>a</sup>	3.43 <sup>d</sup>	3.62	3.73	3.88	3.64
Writing ability	3.46	3.21 <sup>b</sup>	3.43	3.13 <sup>b</sup>	3.85	3.41 <sup>a</sup>	3.75	3.21 <sup>b</sup>
Problem analysis/solving	4.02	3.43 <sup>d</sup>	3.43 <sup>d</sup>	3.43 <sup>d</sup>	3.77	3.41	3.25	3.50
Quantitative competence (math skills)	3.39	3.26	3.22	3.26	3.72	3.45	3.25	3.57
Motivating employees	3.71	3.24 <sup>d</sup>	3.23 <sup>c</sup>	3.24 <sup>d</sup>	3.28	3.27	3.50	3.14
Developing personal business relationships	3.98	3.26 <sup>d</sup>	3.22 <sup>d</sup>	3.27 <sup>d</sup>	3.82	3.23 <sup>b</sup>	3.75	2.93 <sup>c</sup>
<i>Satisfaction</i>								
Satisfied with how I do my job	3.48	4.13 <sup>d</sup>	3.98 <sup>c</sup>	4.17 <sup>d</sup>	3.67	4.09	4.25	4.00
Satisfied with the income I earn	3.09	2.86	2.61 <sup>b</sup>	2.93	3.28	2.91	2.38 <sup>b</sup>	3.21

Continued on the next page

TABLE 3 *Continued*

	Entrepreneurs				Serial entrepreneurs			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Satisfied with the people who work for/with me	3.46	3.86 <sup>c</sup>	3.75 <sup>a</sup>	3.86 <sup>c</sup>	3.00	3.70 <sup>b</sup>	3.71	3.69 <sup>a</sup>
Satisfied with the future prospects of this company	3.73	3.05 <sup>d</sup>	2.78 <sup>d</sup>	3.13 <sup>c</sup>	3.41	2.73 <sup>b</sup>	2.38 <sup>c</sup>	2.93
<i>Resources</i>								
Technological and computer equipment	2.18	3.70 <sup>d</sup>	3.89 <sup>d</sup>	3.66 <sup>d</sup>	1.85	3.59 <sup>d</sup>	4.38 <sup>d</sup>	3.14 <sup>d</sup>
Business facilities and offices	2.86	3.56 <sup>d</sup>	3.74 <sup>d</sup>	3.49 <sup>c</sup>	2.56	3.59 <sup>d</sup>	3.50 <sup>b</sup>	3.64 <sup>c</sup>
Business location	2.50	3.45 <sup>d</sup>	3.51 <sup>d</sup>	3.40 <sup>d</sup>	2.54	3.52 <sup>c</sup>	3.43 <sup>a</sup>	3.57 <sup>c</sup>
Operating/manufacturing plant and facilities	2.66	2.94	2.96	2.94	2.77	2.73	2.50	2.86
Cash/liquidity	2.66	2.76	2.78	2.72	2.72	2.55	1.88 <sup>a</sup>	2.93
Experienced workforce	2.54	3.62 <sup>d</sup>	3.74 <sup>d</sup>	3.52 <sup>d</sup>	2.82	3.45 <sup>b</sup>	3.50	3.43
Customer relationships	2.61	4.10 <sup>d</sup>	4.04 <sup>d</sup>	4.11 <sup>d</sup>	2.62	4.09 <sup>d</sup>	4.00 <sup>c</sup>	4.14 <sup>d</sup>
Cost efficiencies	2.82	3.17 <sup>b</sup>	3.13	3.17 <sup>b</sup>	2.72	3.00	2.75	3.14
Innovation capability	2.75	3.41 <sup>d</sup>	3.17 <sup>a</sup>	3.52 <sup>d</sup>	2.69	3.27 <sup>a</sup>	3.00	3.43 <sup>a</sup>
Flexibility/ability to adapt	3.02	3.82 <sup>d</sup>	3.80 <sup>d</sup>	3.83 <sup>d</sup>	3.03	3.73 <sup>c</sup>	3.75 <sup>a</sup>	3.71 <sup>b</sup>
Reputation/image	2.79	4.02 <sup>d</sup>	3.96 <sup>d</sup>	4.03 <sup>d</sup>	2.41	4.00 <sup>d</sup>	3.88 <sup>c</sup>	4.07 <sup>d</sup>
Expertise/knowledge of employees	2.66	3.63 <sup>d</sup>	3.81 <sup>d</sup>	3.52 <sup>d</sup>	2.74	3.59 <sup>c</sup>	3.75 <sup>b</sup>	3.50 <sup>b</sup>
Shared purpose/values among employees	2.95	3.03	3.08	2.96	2.92	3.24	3.71 <sup>a</sup>	3.00
Partnerships/alliances	2.73	2.41	2.34	2.47	2.87	3.18	2.88	3.36
Access to debt financing	3.04	2.41 <sup>c</sup>	2.27 <sup>c</sup>	2.55 <sup>b</sup>	2.95	2.40	2.13 <sup>a</sup>	2.58
Access to equity financing	2.66	2.35	2.33	2.35	3.00	2.43	2.38	2.46
Access to qualified employees labor force	3.52	2.62 <sup>d</sup>	2.75 <sup>c</sup>	2.54 <sup>d</sup>	3.03	3.10	3.38	2.92
Access to market information	3.68	3.46	3.46	3.52	3.67	3.43	3.38	3.46
Access to technology	3.46	3.46	3.44	3.52	3.46	3.14	3.13	3.15
Access to distribution channel	3.64	2.65 <sup>d</sup>	2.46 <sup>d</sup>	2.77 <sup>d</sup>	3.64	2.57 <sup>c</sup>	2.38 <sup>b</sup>	2.69 <sup>b</sup>
<i>Strategy</i>								
Quality control	4.20	4.18	4.35	4.14	4.36	4.23	4.13	4.29
Satisfaction of customer needs	4.11	4.51 <sup>d</sup>	4.57 <sup>c</sup>	4.48 <sup>c</sup>	4.18	4.45	4.38	4.50
Product/service development innovation	3.98	3.61 <sup>c</sup>	3.47 <sup>c</sup>	3.67 <sup>b</sup>	3.90	3.59	3.63	3.57

*Continued on the next page*

TABLE 3 Continued

	Entrepreneurs				Serial entrepreneurs			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Innovative marketing	3.82	3.05 <sup>d</sup>	3.02 <sup>d</sup>	3.08 <sup>d</sup>	3.82	3.18 <sup>b</sup>	3.63	2.93 <sup>c</sup>
Quality service/product	4.18	4.10	4.15	4.08	4.18	4.05	3.75	4.21
Customer service	3.89	4.03	4.09	4.03	3.82	3.91	4.00	3.86
Partnerships/alliances	3.38	2.61 <sup>d</sup>	2.79 <sup>b</sup>	2.57 <sup>d</sup>	3.62	3.00 <sup>a</sup>	3.25	2.86 <sup>b</sup>
Cost reduction	3.80	3.51 <sup>b</sup>	3.64	3.41 <sup>b</sup>	3.79	3.77	3.88	3.71
Technological innovation	3.82	3.19 <sup>d</sup>	3.31 <sup>b</sup>	3.14 <sup>d</sup>	3.82	2.86 <sup>c</sup>	3.00 <sup>b</sup>	2.79 <sup>c</sup>
First with new products/service	3.75	2.81 <sup>d</sup>	2.78 <sup>d</sup>	2.83 <sup>d</sup>	3.74	2.86 <sup>c</sup>	3.25	2.64 <sup>c</sup>
Operational efficiency and employee productivity	3.80	3.25 <sup>d</sup>	3.40 <sup>b</sup>	3.20 <sup>d</sup>	3.79	3.45	4.13	3.07 <sup>b</sup>
<i>Industry characteristics</i>								
Growth	2.51	2.18 <sup>a</sup>	2.25	2.16 <sup>a</sup>	2.21	2.41	2.75	2.21
Number of competitors	3.18	2.37 <sup>d</sup>	2.37 <sup>c</sup>	2.38 <sup>d</sup>	3.18	2.68 <sup>a</sup>	2.88	2.57 <sup>a</sup>
State regulation	2.93	1.72 <sup>d</sup>	1.71 <sup>d</sup>	1.74 <sup>d</sup>	2.69	2.24	2.38	2.15
Foreign competitors	3.14	1.18 <sup>d</sup>	1.06 <sup>d</sup>	1.25 <sup>d</sup>	3.18	1.75 <sup>c</sup>	1.88 <sup>b</sup>	1.67 <sup>c</sup>
Speed of technological change	3.23	2.58 <sup>c</sup>	2.02 <sup>d</sup>	2.80 <sup>a</sup>	2.90	2.76	2.63	2.85
Ease of new company entry into industry	3.25	2.85 <sup>b</sup>	2.52 <sup>c</sup>	3.01	3.00	3.55 <sup>a</sup>	3.50	3.57 <sup>a</sup>
Supplier pricing	3.09	2.50 <sup>c</sup>	2.21 <sup>d</sup>	2.62 <sup>c</sup>	2.72	2.68	2.38	2.86
Retailer pricing	3.11	2.21 <sup>d</sup>	2.08 <sup>d</sup>	2.28 <sup>d</sup>	2.97	2.73	2.88	2.64
Customer demand	2.63	3.08 <sup>c</sup>	2.98 <sup>a</sup>	3.11 <sup>c</sup>	2.64	2.95	2.63	3.14
Substitute products/services	3.55	2.01 <sup>d</sup>	1.55 <sup>d</sup>	2.19 <sup>d</sup>	3.26	2.68 <sup>a</sup>	2.63	2.71

NOTES Column headings are as follows: (1) China, (2) Germany, (3) West Germany, (4) East Germany. <sup>a</sup>  $p < 0.10$ , <sup>b</sup>  $p < 0.05$ , <sup>c</sup>  $p < 0.01$ , <sup>d</sup>  $p < 0.001$ .

petence in developing personal business relationships is negatively related to the probability that a novice entrepreneur would start another venture. This is further examined in the discussion section.

Relationships between human resource management skills and analytical and problem solving competencies are negatively related to the dependent variable. None of the other functional skills (finance, marketing, operations, organizing and planning, technological expertise) are significantly different between novice and serial entrepreneurs. These findings support hypothesis 2. At the same time, entrepreneurs with superior understanding of information management processes are significantly

more likely to start more than one venture, which is not in line with this hypothesis. This is further discussed below.

The findings lend some support to hypothesis 3. Novice entrepreneurs that have higher rankings on learning and personal growth, and satisfying work relationships are significantly less likely to start a new venture. Also, personal achievement, status and prestige, economic necessity, flexibility in work/family, desire to test one's own ideas, money and wealth, and recognition do not differentiate between novice and serial entrepreneurs.

Significant differences between Chinese and German entrepreneurs were found on a number of dimensions. Overall, entrepreneurs in China and Germany demonstrate many significant differences. These findings are consistent with hypothesis 4. Serial entrepreneurs appear to show more similarities across countries. This lends support to hypothesis 5. We realize, of course, that for serial entrepreneurs only large differences could be detected due to the sample size limitations, and do not claim the results to provide a final answer. While in general German entrepreneurs tend to demonstrate higher urge for flexibility with West German entrepreneurs scoring highest on this goal, serial entrepreneurs showed no significant differences with respect to this goal at all. Generally, Chinese entrepreneurs are more likely to be driven by the desire to test their own ideas compared to German entrepreneurs (again, the contrast is highest with West Germans). Serial entrepreneurs in both countries are no different on this dimension. Chinese entrepreneurs care more for recognition associated with their entrepreneurial status and less for satisfying work relationship compared to their German counterparts. For serial entrepreneurs this difference vanishes. Goals of personal achievement, economic necessity, learning and personal growth are equally important for Chinese and German novice and serial entrepreneurs.

The same pattern also occurs in terms of the skills and competencies of entrepreneurs in China and Germany. In general, Chinese entrepreneurs tend to have a lower level of finance skills, and higher scores on marketing skills, idea generation, managing information systems, technology, negotiating, oral presentation, writing abilities, problem solving, motivating employees, and developing personal business relationships. At the same time, the differences are significantly less for serial entrepreneurs – only writing skills and developing personal business relationship skills differ significantly between China and Germany (Chinese respondents score higher on both dimensions). The rest of skills/competencies

demonstrate statistical indifference between serial entrepreneurs in the two countries.

While entrepreneurs in China tend to be less satisfied with how they do their job, serial entrepreneurs in both countries show no noticeable differences with respect to this characteristic. All entrepreneurs in China showed higher satisfaction with their income and future prospects of their companies and lower satisfaction with their employees compared to German entrepreneurs.

Entrepreneurs in China and Germany differed considerably with respect to their resource endowment. German entrepreneurs surpassed their Chinese counterparts in terms of the availability of technological and computer equipment, business facilities and offices, business location, experienced workforce, innovation capabilities, reputation, image, expertise and knowledge of employees and other resources. This was also the case for serial entrepreneurs. The Chinese seem to have a slight advantage with respect to cash/liquidity over West German entrepreneurs which reflects, in part, the lower costs of doing business in China. On average, entrepreneurs in China have better access to debt financing and distribution channels. Interestingly, despite claiming to have a less experienced workforce, Chinese entrepreneurs were higher on their estimate of having access to qualified employees.

While in general entrepreneurs in China paid less attention to the satisfaction of customer needs, being more concerned with product/service development and cost reduction than their German counterparts, strategies adopted by serial entrepreneurs in China and Germany demonstrate remarkable similarity. Quality control, satisfaction of customer needs, product/service development and quality assurance, customer service and cost reduction were equally important for serial entrepreneurs in both countries. Chinese serial entrepreneurs based their strategies more on innovations in marketing and technologies, introduction of new products and services, and increasing efficiency and productivity than did their German colleagues. They also relied more on partnerships and alliances.

Serial entrepreneurs in both countries were also significantly closer in their estimates of their industries than average entrepreneurs. While generally entrepreneurs in Germany and China saw their industries in a very different light (Chinese respondents tended to conceive of their industries as being more competitive, dynamic and regulated), serial entrepreneurs in the two countries provided statistically similar estimates of their

industries with respect to industry growth, regulation, speed of technological change, supplier/retailer pricing, and customer demand.

On average, entrepreneurs in China employed more family members than their German counterparts. Yet, for serial entrepreneurs the differences were not statistically significant. While males start more businesses in China than in Germany, for serial entrepreneurs there is no difference with respect to gender. Overall, entrepreneurs' ventures in China demonstrate higher growth rates as compared to Germany.

Neither the presence nor absence of these differences between the entrepreneurs in China and Germany indicates whether or not these characteristics are related to the likelihood of a novice entrepreneur becoming a serial one. The interaction effect of characteristics deemed important in explaining the probability of becoming a serial entrepreneur was tested with the respondent's country of origin (binary variable 'China'). Since the number of variables in our final model is large (close to thirty), a separate testing of the interaction effect for motivations-general competencies- and functional skills-based predictors. The results are summarized in the last column of table 2.<sup>5</sup>

As is indicated in table 2, satisfying work relationships and learning and personal growth are less important predictors of becoming a serial entrepreneur in China compared to Germany. At the same time, status and prestige associated with entrepreneurial occupation, and greater flexibility in work/family balance mean more to the Chinese respondents who have decided to start more than one venture. Superior oral presentation competencies as well as organizing and planning skills appear to be more important predictors of self-selection into serial entrepreneurs in China compared to Germany while managing information systems skills seem to be more important in Germany than in China.

### **Conclusions**

This study contributes to the entrepreneurship literature in several ways. First, the results have discovered and explained a number of new findings with respect to serial entrepreneurship in general. Second, by comparing 'average' and serial entrepreneurs in emerging economies to their counterparts in the developed ones, the results further the current understanding of the cross-culture differences affecting entrepreneurship.

In addition, the findings indicate a possible relationship between the entrepreneur's experience and the probability of starting more than one venture. Novice entrepreneurs with more salient learning/personal

growth motivations are less likely to start multiple companies. This may indicate that novice entrepreneurs prefer to learn by their mistakes at the first venture in order not to replicate them later. It is also apparent that those who value satisfying work relationships tend to stay at the same place longer, thus making emotional investment in social capital. This suggests that serial entrepreneurs do not very much value their social relationships within their current ventures, and easily move on to another project once they see the opportunity. Also, entrepreneurs that rank themselves relatively high on management development, training and communication skills are less likely to launch more than one venture. This may indicate that those who are more able in this regard are more likely to achieve success at their first venture and thus have no need to initiate other projects. Alternatively, it may mean that such entrepreneurs emotionally invest more in their companies and are more committed to them than those who become serial entrepreneurs. Since launching a new venture puts a heavy burden on the entrepreneur in terms of information processing, it is no surprise that individuals who ranked themselves higher on data collection and information management skills are more likely to become serial entrepreneurs.

The results also point out that entrepreneurs with superior competences in developing personal business relationships are less likely to launch more than one venture. These entrepreneurs may be more likely to become overly successful with their first venture to the extent that they do not want to engage in another one, or are so emotionally invested in these relationships that abandoning them for an uncertain new project is too high an opportunity cost. If the latter is true, it may be an indication of bonding rather than enabling social ties. Novice entrepreneurs with superior analytical/problem solving skills are also less likely to become serial entrepreneurs. This finding is consistent with the results on entrepreneur's overconfidence. To go ahead, the entrepreneur must be confident in his/her strategy; and superior analytical skills may actually impede future business foundings as the entrepreneur would spend most of the time trying to foresee and address possible contingencies. To succeed, entrepreneurs need to effectively communicate their ideas to others both orally ('elevator pitch') and in writing (formal business plans). Our data confirms that novice entrepreneurs with superior oral presentation competence and writing ability are more likely to become serial entrepreneurs.

Finally, overall, there are a significant number of differences between

entrepreneurs in China and Germany. In general, entrepreneurs in the two countries show numerous dissimilarities in their goals, skills and competences, job satisfaction, venture strategies and resources as well as operate in quite different industries. For serial entrepreneurs these differences are significantly reduced. Although some differences could have resurfaced had we had a larger sample at our disposal, it appears that serial entrepreneurs are more similar across countries. This similarity notwithstanding, mechanisms determining further self-selection of novice entrepreneurs into serial entrepreneurs differ significantly between China and Germany. Whether or not these findings generalize to the larger population of entrepreneurs in emerging countries needs further studies.

### Notes

- 1 Without loss of generality.
- 2 This cost function is increasing in the level of both skills and is convex.
- 3 Entrepreneurs could have different patterns of investment in human capital, depending on the parameter of the optimization problem. In any case, the goal of the investment strategy is to reach similar levels of aptitude in both skills.
- 4 Given a large number of variables in the model (29) we use the somewhat less stringent significance level of 0.10 as an indication of (possible) relationships between a certain variable and a probability of a novice entrepreneur becoming a serial entrepreneur.
- 5 Extended results are available from the authors upon request.

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