China & World Economy



China & World Economy / 60–84, Vol. 25, No. 2, 2017

# University Students' Entrepreneurial Intentions: A Comparative Analysis of Hong Kong and Guangzhou

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Abstract

*Based on original survey data, this paper analyses and compares the role of personal traits and networks in determining entrepreneurial intentions of students in Hong Kong and in Guangzhou. The two cities are culturally closely related but differ strongly with respect to their labor market conditions and the maturity of their legal and business environments. We find that the determinants of students' entrepreneurial intentions differ substantially between Hong Kong and Guangzhou, with the findings for Hong Kong showing much similarity with previous findings for Western economies. This suggests that differences in labor market prospects and in the maturity of their legal and business environments might be more important than cultural (dis-)similarities in identifying key factors forming students' entrepreneurial intentions.*

Key words: China, entrepreneurial intention, Hong Kong, personal networks, personal traits

JEL codes: J24, L26, M13, O15

## I. Introduction

Starting with the economic reforms in 1978, the Chinese economy has transformed into a socialist market economy with high growth rates and vibrant entrepreneurship. Although foreign direct investment (FDI), state-owned enterprises and infrastructure

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investment have all played their role, China's impressive growth performance since the 1990s has been mainly fueled by the emergence of a dynamic private sector: The state sector's share of GDP decreased from over 90 percent in 1978 to less than 40 percent in 2014 and almost all new job creation during the past decade came from private companies (Leutert, 2015). China's economy today is highly entrepreneurial, characterized by high actual start-up rates, strong entrepreneurial intentions and high public interest in entrepreneurship (Kelley et al., 2012). According to Pistrui et al. (2001, p. 142) China "provides a unique living laboratory in which to explore entrepreneurship, family business, and SME development."

A particularly important, yet underresearched, form of entrepreneurship is graduate entrepreneurship in China. China has pledged more policies to encourage entrepreneurial activity, placing particular emphasis on student entrepreneurs who are seen as key agents of innovation, but face increasingly difficult employment prospects (Bastin, 2014). Since the expansion of university enrolment capacity in China in the late 1990s, the number of students has increased rapidly, while at the same time university graduates face increasing difficulty finding jobs (Hong, 2011; IWEP, 2013). Employment rates of university graduates decreased from around 85 percent in 1999 to 67.9 percent in 2009, suggesting that graduates are not only pulled by opportunity, but also pushed into self-employment out of necessity (Hong, 2011).

The current paper investigates the factors determining students' self-employment preferences and their intentions for actually becoming self-employed. The analysis is focused on Hong Kong (HK) and Guangzhou (GZ). Both regions are among the economically strongest and most business-friendly in China.[1] HK's colonial history, the impact of British rule and institutions, and the special status of HK within China make it a particularly interesting place to look at. As a region of reference in mainland China we chose the province of Guangdong, focusing on its capital Guangzhou. These two regions differ from each other, particularly with respect to the labor market conditions and the maturity and reliability of the legal and business environments. Despite such differences, HK and GZ share some common features and interact intensively with one another both economically and socially. GZ is located in the Pearl River Delta, where China's economic reform began, and HK firms acted as the first-mover investors in GZ. HK and GZ are close to each other not only in geographic terms: the people in the two regions share a common language (Cantonese) and culture, and the majority of citizens

[1]HK returned to China in 1997 and has been one of China's special administrative zones since then. Different from GZ and other cities in mainland China, the history as a British colony enabled HK to build a well-established legal system and a highly developed modern economy. HK is still granted broad autonomy in dealing with economic and internal affairs.

of HK were either born in or are descended from people from Guangdong (Child and Möllering, 2003). In short, these two megacities share a common cultural heritage, but have a very different history and show marked institutional, political and economic differences. While HK can be characterized as an advanced market economy, GZ can be characterized as an emerging (city) economy. They are, hence, particularly well-suited objects of comparative analysis. Moreover, both cities are economic powerhouses that are not only relevant for the Chinese economy but for the world economy as a whole.

Our findings show that the determinants of students' self-employment intentions (and preferences) differ substantially between HK and GZ, suggesting that differences in labor market prospects for university graduates and in the maturity of the legal and business environments might be more important than cultural (dis-)similarities in forming entrepreneurial intentions. Our findings also suggest that the relevance of the determinants underlying entrepreneurial intentions depends on the economy's state of development and the predominant form of entrepreneurship (opportunity entrepreneurship versus necessity entrepreneurship), which has important consequences for policy as well as for the design of future research.

The present paper proceeds as follows. Section II develops the analytical framework of the investigation, based on a brief literature review. Section III describes the data, deals with measurement issues and introduces the empirical models. Section IV presents and discusses the results of the econometric analysis. Section V concludes and provides policy implications.

## II. Analytical Framework

### 1. Basic Concepts and Research Questions

This paper aims at gaining insight into what drives the entrepreneurial intentions of students in HK and GZ and at investigating differences between these two groups. We focus on senior students as they face major career decisions in the near future.[2]

The core variable of interest is university students' entrepreneurial intention (i.e. the intention to become self-employed after graduation). Forming an entrepreneurial intention is the first, and most important, step in the process of venture creation (Gartner et al., 1994). Studying intentions rather than actual start-ups has two key advantages.[3]

[2]Senior students are bachelor students in their third or fourth year, or masters students.

[3]There is ample empirical evidence for a positive correlation between entrepreneurial intentions and total entrepreneurial activity (Bosma et al., 2012).

First, intentions are considered the best predictors of behavior that is rare, risky or involves unpredictable time lags as is the case for becoming an entrepreneur (Ajzen, 1991). Second, they directly reflect higher-level influences without being distorted by potential survival bias, ex-post rationalization by respondents, or the risk of identifying consequences instead of determinants of self-employment. In a nutshell, intentions models offer a coherent, parsimonious and robust framework for pursuing a better understanding of entrepreneurial processes (Krueger et al., 2000).

In this paper we distinguish between an individual's self-employment intentions and his/her self-employment preferences.

Self-employment preferences (s-e-preferences) describe an individual's subjective valuation (desirability) of self-employment as compared to wage employment. Preferences for self-employment abstract from feasibility constraints on self-employment.

Self-employment intentions (s-e-intentions), by contrast, also consider the feasibility aspect. An individual tends to have strong self-employment intentions, if he/she perceives self-employment as both desirable and feasible. Determinants of s-e-preferences and s-e-intentions are not identical, as will be discussed in Subsection II.3.

## 2. Theoretical Background

Although innovative in its distinction between s-e-preferences and s-e-intentions, our approach is deeply rooted in the literature on determinants of self-employment. Heinrichs and Walter (2013) provide a literature review and categorize the research on the determinants of self-employment into six paradigms: traits, cognitive, affective, intentions, learning and economic perspectives. The traits perspective emphasizes the importance of individual traits and dispositions as crucial determinants of becoming self-employed (House et al., 1996). The cognitive perspective (Busenitz and Lau, 1996) emphasizes the key role of cognitive processes (i.e. entrepreneurs may access, perceive, process and use information differently from others). The affective perspective (Baron, 2008) holds that entrepreneurial decisions are strongly influenced by emotions and feelings. The intentions perspective (Shapero and Sokol, 1982; Ajzen, 1991) emphasizes the role of perceived desirability and perceived feasibility in forming s-e-intentions. The learning perspective (Bandura, 1977) posits that observational learning from role models is a key feature in the socialization of entrepreneurs. Finally, the economic perspective (Blanchflower and Oswald, 1998) assumes that individuals rationally weight costs and benefits of self-employment as compared to wage employment.

Our study integrates elements from all paradigms except for the affective

perspective. First, we explicitly differentiate between perceived desirability and perceived feasibility as key determinants of s-e intentions (intentions perspective). Our approach is, thus, very close in spirit to Shapero's model of the entrepreneurial event (Shapero, 1975; Shapero and Sokol, 1982), where perceived desirability is defined as the attractiveness of starting a business and perceived feasibility is understood as personal capability to start a business (Krueger et al., 2000).[4] A related intentions-based approach is Ajzen's theory of planned behavior (Ajzen, 1991) that views attitude towards the behavior, social norms and perceived behavioral control as antecedents of intentions. Perceived desirability roughly corresponds to attitude towards the behavior (and is also influenced by social norms), whereas perceived feasibility roughly corresponds to Ajzen's concept of perceived behavioral control.

Second, our approach considers the traits perspective. As shown by Heinrichs and Walter (2013), risk-taking propensity, need for achievement and need for independence are among the most important individual traits for pursuing an entrepreneurial career. We consider all three traits and go further in differentiating the need for achievement (i.e. the expectation of doing things better and faster than others or than one's own previous accomplishments) into two categories: work-related need for achievement and benefit-related need for achievement.[5] Such a distinction appears to be particularly important in the Chinese context, as suggested by Djankov et al. (2006a, b).

A third perspective considered is the learning perspective, emphasizing that individuals tend to learn from role models (Bandura, 1977). Early exposure to entrepreneurial role models within the family is often held to positively affect children's preference for self-employment, as children are exposed to an entrepreneurial lifestyle and entrepreneurial values (Chlosta et al., 2012). Recent research (e.g. Dohse and Walter, 2012) has shown that effective role models can also be found among friends and acquaintances and in the regional environment of an individual.

Finally, we consider economic aspects that influence the costs and benefits of being self-employed. Earlier work has suggested that returns to entrepreneurship depend on work experience, management experience, and education and training in the formal education system (Davidsson and Honig, 2003; Audretsch et al., 2015). Thus, we control

[4]An additional category that is proposed by Shapero is the so-called "propensity to act"; that is, a person's disposition to actually act upon one's decisions (Krueger et al., 2000). We do not explicitly consider "propensity to act" in our approach because it is unclear whether "propensity to act" has a direct influence on the formation of entrepreneurial intentions. It might predict how far individuals are likely to put their intentions into practice, but is less helpful in explaining the formation of entrepreneurial intentions, which is our core question in this paper.

[5]The exact definitions and measurement details are provided in Section III.

for students' major subjects of study, which may affect employment perspectives and self-employment opportunities after graduation. Most importantly, we also consider the support students expect to receive from their personal networks (i.e. parents, other relatives, friends and acquaintances) in starting or running their own business. Finally, we also consider students' self-employment experience.

## 3. Determinants of Self-employment Preferences and Self-employment Intentions

*Determinants of self-employment preferences*

Following the pertinent literature, we expect that personal traits and dispositions have a strong impact on the desirability of self-employment. We therefore consider need for achievement, need for independence and risk-taking propensity as (potential) determinants with a positive impact on students' self-employment preferences.[6] Moreover, role models, such as parents, other relatives, and friends and acquaintances, are expected to be influential in the motivation to become self-employed. Finally, we consider several control variables, including students' age, gender, self-employment experience and major subject of study.

*Determinants of self-employment intentions*

When moving from s-e-preferences to s-e-intentions, feasibility considerations come into play as well. Some personal traits, such as need for achievement and need for independence, may impact self-employment intentions only indirectly via their impact on s-e-preferences. Risk-taking propensity is different in this respect as it not only affects the desirability but also the perceived feasibility of self-employment. Therefore, risk-taking propensity is expected to positively affect self-employment intentions both directly and indirectly via s-e-preferences.

Another factor affecting the perceived feasibility of self-employment is the expected support from parents, other relatives and friends and acquaintances (Dohse and Walter, 2012). While the cultivation of personal networks, in some form and to some extent, exists in every society, its specific form, *guanxi*, and its pervasiveness and importance in daily social and business life are often considered distinctively Chinese (Standifird and Marshall, 2000). We thus expect that the scope and the leverage of a student's personal network will influence his/her perceived feasibility of self-employment. Students who expect to receive more support from their personal networks when starting their own business are, thus, expected to have stronger s-e-intentions on

[6]A list of all variables considered in the econometric models is provided in Table 1.

average. We expect the control variables for age, gender, self-employment experience and major subject of study to have direct impacts on the perceived feasibility of self-employment as well.

The (estimated) relationship between students' self-employment preferences and intentions on the one hand and their personal traits and personal networks on the other hand is likely to be affected by the different labor market conditions and prospects of HK and GZ university graduates. The comparatively difficult labor market situation for university graduates in GZ suggests that some of the GZ graduates that intend to become self-employed after graduation may have this intention because they anticipate problems of finding adequate salaried employment. A (possibly) substantial share of students in our GZ sample that are "forced" into self-employment may dilute the relationship between students' personal traits and the strength of their personal networks on the one hand and their s-e-intentions on the other. It may also affect students' s-e-preferences as self-employment may be perceived as more attractive and less risky relative to wage employment.

Another important issue that may affect our results relates to differences in the institutional and economic environment between HK and GZ. There have been remarkable improvements over the past three decades in many formal legal and economic institutions in Guangdong and its capital Guangzhou (Bickenbach and Liu, 2010).[7] Still, many formal institutions relating, for example, to contract law and its enforcement or to financial intermediation are still deficient in GZ and are clearly less developed and less business-friendly than those in HK.[8] Given that personal relationships may serve as a substitute for deficient formal institutions, we may expect the average level of support students anticipate they will receive from their personal networks to be higher and the relationship between expected support and s-e-intentions to be stronger in GZ than in HK.

## III. Measurement and Model Specification

### 1. Database

The analysis is based on two original datasets collected by carefully designed and performed student surveys in HK and in GZ. The two surveys were carried out in 2012,

[7]Guangdong has been a pioneer region of the economic reform process in China, and formal legal and economic institutions are generally more developed and more business-friendly there than in most other regions in mainland China (World Bank, 2008).

[8]HK is generally considered as one of the freest and most developed market economies in the world and receives very high rankings in most comparisons of worldwide governance indicators.

and equivalent survey procedures and questionnaires in Chinese were applied in both cities.[9]

The HK Student Survey was carried out in three of the eight public universities in Hong Kong: the University of Hong Kong, the Chinese University of Hong Kong and the Hong Kong University of Science and Technology. These three universities are widely recognized among Hong Kong citizens as leading public universities (HKU Pop Site, 2015). Their comprehensive education programs and relatively large student sizes provide a broad base for comparative empirical analyses and sufficient variations in student samples. The investigation is focused on senior students from five broadly defined major subjects: business administration, economics, social sciences/geography, computer sciences and engineering.

Focusing on the same group of students and the same majors as in HK, the GZ Student Survey was undertaken at Sun Yat-Sen University (SYSU) and South China Normal University (SCNU). These two well-known universities were selected due to their long history, the comprehensive program covering all university majors we considered and their large student base that provides potential samples with sufficient variations in determinants considered in the analysis. By focusing on these two universities we considered one centrally-governed and one provincially-governed university for the analysis. Both are among the key universities in Guangdong that are recognized as universities of China's "211 Project." As in HK, the survey addressed senior students from the five major subjects. In total, 908 questionnaires were completed and returned (300 from HK and 608 from GZ),[10] providing a unique database for comparative empirical research.

As is typical in the pertinent literature (see Djankov et al., 2006a, b; Souitaris et al., 2007), we focused our research on a few outstanding cities. While not necessarily representative of China as a whole, our study covers two megacities that are important for the Chinese economy. The overall aim is to ensure maximum comparability between the two (HK and GZ) subsamples, as recommended by Hausman and Wise (1985), while at the same time yielding a high level of representativeness. Therefore, we endeavored to address all senior students within the five majors in the above-named HK and GZ universities. All students were provided with the same information and incentives to join the survey. In this way, we addressed our target interviewees immediately and directly, without any preclusion of students that could otherwise affect the objectivity of the study.

[9]To ensure comparability with related work in different cultural and institutional contexts we used a questionnaire similar to the one used in Dohse and Walter (2012) for Germany and adapted it to the Chinese circumstances. The survey questionnaire can be obtained upon request.

[10]As some students did not answer all questions, our regression analyses are based on between 298 and 300 questionnaires from HK and between 519 and 531 questionnaires from GZ.

## 2. Measuring Self-employment Preferences and Intentions

*Self-employment preferences*

Our measure of students' s-e-preferences (*SEPref*) is derived by calculating the average level of importance assigned by each student to seven arguments favoring self-employment (Cronbach alpha[11] = 0.88): As a self-employed person, I would "(1) … be my own boss," "(2) … be able to fulfil myself," "(3) … earn a higher salary than as an ordinary employee," "(4) … deal with challenging tasks," "(5) … bear great responsibilities," "(6) … be able to contribute to the well-being of my home region or country," and "(7) … receive particular appreciation from society at large." For assessment, students were asked to use a five-grade Likert scale, with 1 meaning "no importance at all" and 5 reflecting "very important." A student assigning a higher average level of importance is interpreted as one with a stronger s-e-preference.

*Self-employment intentions*

Information about students' s-e-intentions is obtained from another question asking students to indicate the degree to which they agree with three statements relating to their plans for self-employment using a five-grade Likert scale, with 1 indicating complete disagreement and 5 indicating complete agreement: "(1) It is clear to me that I will try to be self-employed as soon as possible," "(2) I want to become self-employed within 5 years after my graduation," and "(3) I want to become self-employed someday in the future." Students who assigned a Likert grade of 4 or higher to at least one of the three statements are categorized as having clear intentions to become self-employed (*SEInt* = 1), whereas all others are categorized as those without clear self-employment intentions (*SEInt* = 0).

## 3. Measuring Personal Traits and Personal Networks

*Personal traits*

The four personal traits considered in our model are work-related need for achievement, benefit-related need for achievement, need for independence and risk-taking propensity.[12]

Each student's work-related need for achievement (*NA_W*) is derived by calculating his/her average level of agreement to the statements that they like hard work and that they prefer to do challenging and difficult tasks rather than tasks at which they feel

[11]Cronbach's alpha measures the internal consistency among items considered to explain a certain psychological feature. Thus, it is usually used to measure the reliability of psychometric tests (Cronbach, 1951).

[12]See also Table 1. The survey questionnaire can be obtained upon request.

confident and relaxed (Cronbach alpha = 0.57).[13] Similarly, a student's benefit-related need for achievement (*NA_B*) is derived by calculating his or her average level of agreement on four statements relating to his or her attitudes towards earning a lot of money, having authority over other people, his or her performance relative to others, and obtaining respect and prestige through his or her job (Cronbach alpha = 0.58).[14] Both work-related and benefit-related need for achievement are expected to positively impact students' s-e-preferences.

A similar positive relation is expected between s-e-preferences and students' need for independence (*NI*), which is constructed by calculating the average level of agreement (using the same five-grade Likert scale) to four statements (Cronbach alpha = 0.74) about his/her attitudes towards having freedom to decide on work–time management, to determine work content, to setting priorities among tasks and towards not being subordinated to others in carrying out group work. Students with a higher value of *NI* are considered as having a stronger need for independence.

Students' risk-taking propensity is considered as the fourth personal trait. The corresponding variable (*Risk*) is obtained by asking each student which of the two lotteries from five pairs of lotteries he/she would choose and summing up the number of times he/she decided on the more risky of the two lotteries of a pair. Possible values of the variable *Risk* thus range from 0 to 5. Students with higher risk-taking propensity are expected to have stronger preferences for self-employment, which is often characterized by high levels of risk and uncertainty. They may also be expected to perceive the feasibility of self-employment more positively.

*Personal networks*

We consider two groups of personal network variables in our econometric analysis.

The first relates to the importance of entrepreneurial role models. We distinguish three kinds of role models; parents (variable *RM_P*), other relatives (*RM_OR*), and friends and acquaintances (*RM_F*). These variables take a value of 1 if at least one of the student's parents, other relatives, or friends and acquaintances are or were self-employed and take a value of 0 otherwise. The existence of such entrepreneurial role models is expected to affect students' s-e-preference positively.

The second group of network variables captures the support students expect to

[13]We again used a five-grade Likert scale, with 1 indicating complete disagreement and 5 complete agreement. In the survey, these two statements relating to students' work-related need for achievement were actually formulated in a reverse way (e.g. like to "avoid hard work" rather than like "hard work"). In calculating the values of the *NA_W* variable, we reversed the specified Likert values accordingly.

[14]The same Likert scale was used.

obtain from the different social groups within their personal networks to deal with critical challenges related to self-employment. We considered six different support categories: financial support, support in accessing business, technological and legal know-how, and support in establishing/maintaining business contacts and political contacts. For each category and for each social group we asked students to indicate the level of expected support[15] and calculated the average level of support each student expects to obtain from each of the three groups. Thus, we obtained three variables measuring expected support from parents (*ExS_P*; Cronbach alpha = 0.93), other relatives (*ExS_OR*; Cronbach alpha = 0.92) and friends and acquaintances (*ExS_F*; Cronbach alpha = 0.92). All three variables are expected to positively affect students' perceived feasibility of self-employment and, thus, their self-employment intentions.

*Controls*

We consider two sets of control variables. The first includes students' age, gender and self-employment experience. *Age* is defined as student's age in the survey year 2012. *Gender* is a binary variable with 1 for male students and 0 for females. The self-employment experience variable, *SEExp*, is also a binary variable with 1 for students with self-employment experience and 0 otherwise. The second set of controls captures the individual students' university majors and consists of four binary variables: *BusAd* for business administration, *Econ* for economics, *CompSc* for computer sciences and *Eng* for engineering. The students majoring in social sciences/geography are used as a reference in the analysis.

## 4. Model Specifications

An overview of all model specifications and all variables used in the regressions is provided in Table 1.

*Self-employment preferences*

To investigate the determinants of students' s-e-preferences, we run a linear regression (OLS) of our measure of students' s-e-preferences, *SEPref*, on a set of independent variables derived from the previous literature (see model [1] in Table 1).

*Self-employment intentions*

In a second step, we investigate the role of students' personal traits and personal

[15]We used a five-grade Likert scale, with 1 meaning "no support at all" and 5 representing "very much support."

Table 1. Variable Description and Estimation Model Structure

| Variable | Description | *SEPref* | *SEInt* | |
|---|---|---|---|---|
| | | (1) | (2) | (3) |
| *SEPref* | Preference for self-employment | | | *X* |
| *SEInt* | Having clear self-employment intention (1) or not (0) | | | |
| Personal traits | | | | |
| *NA_W* | Work-related need for achievement | *X* | *X* | |
| *NA_B* | Benefit-related need for achievement | *X* | *X* | |
| *NI* | Need for independence | *X* | *X* | |
| *Risk* | Risk-taking propensity | *X* | *X* | *X* |
| Personal network: Role model: At least one self-employed among … | | | | |
| *RM_P* | Parents (1), otherwise (0) | *X* | | |
| *RM_OR* | Other relatives (1), otherwise (0) | *X* | | |
| *RM_F* | Friends/acquaintances (1), otherwise (0) | *X* | | |
| Personal network: Average expected support from … | | | | |
| *ExS_P* | Parents | | *X* | *X* |
| *ExS_OR* | Other relatives | | *X* | *X* |
| *ExS_F* | Friends and acquaintances | | *X* | *X* |
| Controls | | | | |
| *Age* | Age (in years) | *X* | *X* | *X* |
| *Gender* | Female (0) /male (1) | *X* | *X* | *X* |
| *SEExp* | Having experience in self-employment (1) or not (0) | *X* | *X* | *X* |
| *Uni. Major* | | | | |
| *BusAd* | Business administration (1), otherwise (0) | *X* | *X* | *X* |
| *Econ* | Economics (1), otherwise (0) | *X* | *X* | *X* |
| *CompSc* | Computer sciences (1), otherwise (0) | *X* | *X* | *X* |
| *Eng* | Engineering (1), otherwise (0) | *X* | *X* | *X* |
| *SoSc* | Social sciences/geography (1), otherwise (0) | | | |

Notes: *SoSc* is taken as a reference variable in the estimation models. All models are estimated for Hong Kong and Guangzhou, respectively. *X* = variable included as explanatory variable

networks in their s-e-intentions. Due to the binary nature of our self-employment intention variable (*SEInt*), we follow a nonlinear probit approach for the estimation of models (2) and (3) in Table 1.[16]

As our two-stage approach assumes that most personal trait variables affect s-e-employment intentions only indirectly via their effect on s-e-preferences, we estimate a second model, our preferred specification, in which the personal trait variables (*NA_W*, *NA_B* and *NI*) are substituted by the (observed values of the) s-e-preference variable *SEPref* (model [3] in Table 1). We keep the variable *Risk*, as students' risk-taking propensity is expected to have a significant direct impact on how they perceive the feasibility of self-employment, so that the effect of *Risk* on students' s-e-intentions is expected to be not completely absorbed by the s-e-preference variable *SEPref*.

[16]As a robustness check we also constructed a variable *SEInt_ord* that measured the intensity of s-e-intentions and ran ordered probit estimation models for the ordinal intention variable *SEInt_ord*. The results are very similar to those for the existence of s-e-intentions and are available upon request.

All regressions are run separately for our samples of HK students and GZ students.

## IV. Empirical Results

### 1. Results of Descriptive Analysis

Table 2 summarizes the basic statistics of the variables considered in the regression models.

On average, students' s-e-preferences are substantially higher in the GZ sample than in the HK sample. Moreover, a much higher share of students in GZ (59 percent) have a clear s-e-intention than in HK (37 percent). This very high share may be explained by the currently poor wage–employment situation for university graduates in China and by the abundance of business opportunities for newly founded business firms (Yan, 2013), making self-employment a particularly attractive alternative to more traditional employment careers for university graduates in current China.

The share of students with self-employed persons in their personal network is also much higher for students in GZ than in HK: 40 percent of students in GZ that have at least one self-employed parent and just 21 percent of HK students. Similarly, the share of students who know self-employed persons among their other relatives or their friends and acquaintances is clearly higher in GZ (72 and 69 percent, respectively) than in HK (42 and 50 percent, respectively). Another remarkable difference between the two samples is that students from GZ expect, on average, substantially greater support from the members of their personal networks (parents, other relatives, friends and acquaintances). Given that personal relations are generally considered to be of greater importance for doing business in China as compared to HK (see Section II) and given the larger share of students with self-employed persons in their personal networks in GZ, these observations are clearly in line with expectations.

In contrast, differences between the two samples with respect to the personal traits considered are overall very small. There are hardly any differences with respect to students' average need for achievement. The need for independence and the risk-taking propensity are, on average, just slightly higher for the GZ sample. The fact that the differences in (average) personal traits between the two samples turn out to be so small is not surprising given the common cultural heritage and the strong ethnic and language ties between HK and Guangdong.

There are also only small differences between the two samples for *Age* and *Gender*. The average age of students in both samples is approximately 22 years and the majority of interviewed students in both samples are male. The share of students

Table 2. Descriptive Statistics

| | Hong Kong | | | | | Guangzhou | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Name | Mean | SD | Min. | Max. | Obs. | Mean | SD | Min. | Max. | Obs. |
| *SEPref* | 3.01 | 0.79 | 1.29 | 4.71 | 300 | 3.67 | 0.74 | 1 | 5 | 603 |
| *SEInt* | 0.37 | 0.48 | 0 | 1 | 300 | 0.59 | 0.49 | 0 | 1 | 608 |
| Personal traits | | | | | | | | | | |
| *NA_W* | 2.88 | 0.55 | 1.5 | 4.5 | 300 | 2.90 | 0.93 | 1 | 5 | 606 |
| *NA_B* | 3.35 | 0.64 | 1.5 | 5 | 300 | 3.37 | 0.68 | 1 | 5 | 595 |
| *NI* | 3.07 | 0.71 | 1.75 | 5 | 300 | 3.49 | 0.69 | 1 | 5 | 606 |
| *Risk* | 2.30 | 1.72 | 0 | 5 | 300 | 2.42 | 1.52 | 0 | 5 | 604 |
| Personal network: Role model | | | | | | | | | | |
| *RM_P* | 0.21 | 0.41 | 0 | 1 | 300 | 0.40 | 0.49 | 0 | 1 | 584 |
| *RM_OR* | 0.42 | 0.49 | 0 | 1 | 300 | 0.72 | 0.45 | 0 | 1 | 574 |
| *RM_F* | 0.50 | 0.50 | 0 | 1 | 300 | 0.69 | 0.46 | 0 | 1 | 570 |
| Personal network: Expected support | | | | | | | | | | |
| *ExS_P* | 1.66 | 0.93 | 1 | 5 | 300 | 2.64 | 0.99 | 1 | 5 | 586 |
| *ExS_OR* | 1.62 | 0.70 | 1 | 3.67 | 299 | 2.74 | 0.91 | 1 | 5 | 578 |
| *ExS_F* | 1.93 | 0.48 | 1 | 3.5 | 299 | 3.39 | 0.91 | 1 | 5 | 579 |
| Controls | | | | | | | | | | |
| *Age* | 22.9 | 2.15 | 20 | 32 | 300 | 22.2 | 1.26 | 19 | 31 | 605 |
| *Gender* | 0.56 | 0.50 | 0 | 1 | 300 | 0.57 | 0.50 | 0 | 1 | 607 |
| *SEExp* | 0.19 | 0.40 | 0 | 1 | 300 | 0.04 | 0.20 | 0 | 1 | 608 |
| *BusAd* | 0.31 | 0.46 | 0 | 1 | 300 | 0.20 | 0.40 | 0 | 1 | 585 |
| *Econ* | 0.11 | 0.31 | 0 | 1 | 300 | 0.20 | 0.40 | 0 | 1 | 585 |
| *CompSc* | 0.13 | 0.34 | 0 | 1 | 300 | 0.13 | 0.34 | 0 | 1 | 585 |
| *Eng* | 0.25 | 0.44 | 0 | 1 | 300 | 0.27 | 0.44 | 0 | 1 | 585 |
| *SoSc* | 0.20 | 0.40 | 0 | 1 | 300 | 0.20 | 0.40 | 0 | 1 | 585 |

Notes: Max., maximum; Min., minimum; Obs., observations; SD, standard deviation.

with self-employment experience is very low in GZ (4 percent), whereas it amounts to a remarkable 19 percent in HK. Moreover, the distribution of students across different majors is quite similar between the two samples and relatively even across different majors.

## 2. Estimation Results

*(1) Self-employment Preferences*

The regression results for students' self-employment preferences are displayed in columns (1) and (4) of Table 3.

*Hong Kong*

For the HK sample (column [1]) almost all of the explanatory variables have significant and expected effects. Both work-related and benefit-related need for achievement have a highly significant positive effect on students' self-employment preferences. The same

is true for students' risk-taking propensity. The effect of need for independence is also positive, but not significant.

For the personal network variables, we find that having self-employed parents or other relatives has a highly significant positive effect on students' self-employment preferences, whereas having self-employed people among the wider network of students' friends and acquaintances has no significant effect. These results confirm previous findings indicating that parents and relatives are important role models for self-employment (Chlosta et al., 2012). The outstanding importance of parental role models may be explained by the long-term relationship between parents and children and by the fact that parents imprint on the preferences of their offspring from early in their life. The same argument holds, although to a somewhat lesser degree, for other relatives.

Regarding the control variables, the estimates show that male students in HK have a greater self-employment preference than female students, whereas students' age and self-employment experience have no significant effect. The same is true for the subjects of study variables, suggesting that students from different subjects do not differ significantly regarding their self-employment preferences.

*Guangzhou*

The estimation results for GZ (column [4] of Table 3) differ substantially from those for HK. Among the personal traits variables, only benefit-related need for achievement and need for independence have a significant positive effect on students' s-e-preferences. The estimated effects of students' work-related need for achievement and their risk-taking propensity have the expected positive sign, but are not significant.

The insignificance of the risk-taking propensity in GZ may again relate to the difficult labor market situation for university graduates in current China (see above). High unemployment rates among graduates and manifold opportunities for self-employment in China suggest that the perspective of wage employment may actually be as risky and uncertain as that of self-employment.

Of the three role-model variables, only the variable for "other relatives" is significant. Although this finding is somewhat unexpected, it could possibly be related to the very high share of students who have self-employed persons within their personal network. This suggests that role models may not be scarce and, thus, not crucial for forming self-employment preferences. In addition, several self-employed people within students' personal networks may have become self-employed only after they lost salaried jobs during the economic crisis and forced self-employment may be less attractive than voluntary self-employment (and these people may not be perceived as positive role models).

Table 3. Regression Results

| | Hong Kong | | | Guangzhou | | |
|---|---|---|---|---|---|---|
| | *SEPref* | *SEInt* | | *SEPref* | *SEInt* | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Personal traits | | | | | | |
| *NA_W* | 0.176*** | 0.203 | | 0.036 | –0.004 | |
| | (0.060) | (0.197) | | (0.034) | (0.066) | |
| *NA_B* | 0.287*** | 0.794*** | | 0.270*** | 0.497*** | |
| | (0.081) | (0.269) | | (0.048) | (0.095) | |
| *NI* | 0.094 | 0.278 | | 0.217*** | 0.177* | |
| | (0.064) | (0.213) | | (0.048) | (0.094) | |
| *Risk* | 0.082*** | 0.209*** | 0.335*** | 0.003 | 0.002 | 0.003 |
| | (0.023) | (0.076) | (0.095) | (0.021) | (0.039) | (0.039) |
| *SEPref* | | | 2.336*** | | | 0.487*** |
| | | | (0.370) | | | (0.088) |
| Role model | | | | | | |
| *RM_P* | 0.412*** | | | 0.045 | | |
| | (0.082) | | | (0.064) | | |
| *RM_OR* | 0.262*** | | | 0.133* | | |
| | (0.066) | | | (0.075) | | |
| *RM_F* | 0.003 | | | 0.050 | | |
| | (0.064) | | | (0.073) | | |
| Expected support | | | | | | |
| *ExS_P* | | 0.681*** | 0.523*** | | –0.086 | –0.073 |
| | | (0.136) | (0.158) | | (0.072) | (0.071) |
| *ExS_OR* | | –0.107 | –0.194 | | 0.104 | 0.119 |
| | | (0.166) | (0.185) | | (0.084) | (0.082) |
| *ExS_F* | | 0.179 | 0.249 | | 0.151** | 0.117 |
| | | (0.237) | (0.296) | | (0.072) | (0.071) |
| Controls | | | | | | |
| *Age* | 0.008 | 0.093* | 0.131** | –0.021 | –0.036 | –0.017 |
| | (0.017) | (0.052) | (0.066) | (0.026) | (0.050) | (0.049) |
| *Gender* | 0.378*** | 0.872*** | 0.335 | –0.008 | 0.376*** | 0.401*** |
| | (0.084) | (0.278) | (0.345) | (0.069) | (0.131) | (0.128) |
| *SEExp* | 0.052 | 0.141 | 0.057 | 0.132 | 0.610* | 0.459 |
| | (0.090) | (0.302) | (0.369) | (0.158) | (0.329) | (0.329) |
| *BusAd* | 0.059 | –0.359 | –0.711* | –0.097 | –0.094 | –0.013 |
| | (0.099) | (0.340) | (0.425) | (0.098) | (0.190) | (0.186) |
| *Econ* | 0.187 | –0.167 | –0.283 | –0.042 | –0.396** | –0.337* |
| | (0.122) | (0.419) | (0.465) | (0.103) | (0.192) | (0.188) |
| *CompSc* | –0.045 | –0.796** | –0.916** | –0.154 | –0.690*** | –0.576** |
| | (0.121) | (0.399) | (0.463) | (0.121) | (0.223) | (0.222) |
| *Eng* | –0.014 | –0.160 | –0.315 | –0.011 | –0.354** | –0.365** |
| | (0.105) | (0.339) | (0.403) | (0.094) | (0.179) | (0.176) |
| Number of observations | 300 | 298 | 298 | 519 | 524 | 531 |
| Pseudo-$R^2$ | 0.567 | 0.504 | 0.657 | 0.150 | 0.110 | 0.101 |
| LR | 26.60*** | 197.7*** | 257.9*** | 6.36*** | 77.3*** | 72.2*** |

Notes: OLS estimates for (1) and (4) and probit estimates for the rest; constant not shown; standard errors are in parentheses; two-tailed-tests, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Neither of the control variables has a significant effect for GZ. Contrary to HK, this is also true for the gender variable, implying that female students in GZ have, on average, as positive an attitude towards self-employment as male students, which is an interesting result in itself.

*(2) Self-employment Intentions*

The regression results for students' self-employment intentions[17] are displayed in Table 3, where columns (2) and (5) correspond to our baseline ("traditional") model, while columns (3) and (6) correspond to the idea that students' s-e-intentions are formed in a kind of "two-stage" process (Section II).

*Hong Kong*

As shown in column (2) of Table 3, students' benefit-related need for achievement and their risk-taking propensity have a highly significant positive effect on students' s-e-intentions. The other two personal traits considered have the expected sign, but are not significant. Among the personal network variables only the expected support from parents is found to have a significant and positive effect. This confirms the results of earlier research (e.g. Dohse and Walter, 2012) suggesting that parents rather than other social groups are the source of support that is most important in shaping students' s-e intentions.

Results for the control variables show that male students are more likely than female students to have s-e-intentions, and that students' age has a significant, positive impact on their s-e-intentions. The subject of study variables are all insignificant, except for the computer science dummy, which has a significant and negative effect, suggesting that students of computer sciences are significantly less likely to plan to become self-employed than students of social sciences/geography, which may reflect their better employment prospects as salaried employees.

Column (3) of Table 3 presents the results of our preferred model specification, in which the personal traits variables "work-related need for achievement," "benefit-related need for achievement" and "need for independence" are substituted by students' s-e-preferences.[18] In line with expectations, the effect of s-e-preferences on s-e-intentions is positive and highly significant. The effect of the risk-taking propensity variable remains highly significant and positive, suggesting that students' risk-taking propensity affects their s-e-intentions not only via its effect on s-e-preferences but also via its effect on students' perceptions of the feasibility of self-employment, which is risky, by nature. Also in line with the modeling idea underlying specification (3) is the observation that results obtained for the personal network variables are largely unaffected by the

[17]Similar estimations were carried out for intention intensity. The main findings are hardly changed. Results can be obtained upon request.

[18]See Subsection II.3 for the theoretical argument.

substitution of some personal trait variables by the self-employment preference variable. The results for the control variables resemble those for model (2), with the exception that the effect of gender is no longer significant and that the dummy for business administration as a major subject of study becomes weakly significant.[19]

*Guangzhou*

The results for our baseline specification (column [5] in Table 3) suggest that students' benefit-related need for achievement has a significant positive effect on their s-e-intentions in GZ (as in HK). The effect of students' need for independence is positive and, contrary to the case of HK, (weakly) significant. In contrast to the results for HK we find that students' risk-taking propensity has no significant effect on their s-e-intentions.[20]

Among the personal network variables, only the expected support from friends and acquaintances has a significant, positive effect. While this is consistent with the observation that GZ students expect to receive by far the largest support on average from this group (Table 2), the insignificance of the expected support from parents and other relatives runs counter to a priori expectations and suggests differences in the relative importance of parental support in HK and GZ.

Among the control variables, gender is found to be significant. Three of the university majors are also significant,[21] suggesting that students of economics, computer science and engineering are, ceteris paribus, significantly less likely to have self-employed intentions than students of social sciences/geography.

With our preferred specification (column [6]), the s-e-preference variable has the expected positive effect and is highly significant, whereas risk-taking propensity remains insignificant. The gender variable remains significant, supporting the view that gender affects s-e-intentions mainly through affecting students' perceived feasibility of self-employment, whereas the effect of the expected support from friends and relatives is no longer significant.

## 3. Discussion of Main Findings

The findings of the empirical analysis provide important new insight into the determinants of graduate entrepreneurship in HK and GZ.

[19]A comparison of (McFaddens') pseudo-$R^2$ of the different specifications shows a better fit for model (3) (our preferred specification) than for model (2).

[20]The insignificance of the risk-taking propensity in GZ may again relate to the difficult labor market situation for university graduates in current China (see above).

[21]Again, contrary to the situation in HK, the students' self-employment experience has an at least weakly significant positive effect on *SEInt* in specification (3). We know from Table 2, however, that few students in GZ (4 percent) have such experience.

Students' intentions (and preferences) to become self-employed differ substantially between the two megacities. Self-employment preferences and intentions are, on average, much higher among students in GZ than in HK. Moreover, students in GZ (with its less developed institutional and business environment) expect, on average, more support from their personal networks to deal with the challenges of self-employment than students in HK. By contrast, the differences between the two samples with respect to students' average personal traits are rather small, which is plausible given the common cultural heritage and strong ethnic and cultural ties between HK and GZ.

Although students in GZ and HK are on average very similar with respect to their attitudes and their risk preference, their self-employment intentions (and the factors driving self-employment intentions) differ significantly. The results for HK's advanced market economy with its mature business environment and well-established legal system very much resemble the results for advanced Western market economies (e.g. see Dohse and Walter [2012] for Germany). Estimation results for HK show that students' personal traits (work-related need for achievement, benefit-related need for achievement and risk-taking propensity) as well as role models among parents and other relatives have a positive and highly significant impact on students' s-e-preferences. Students' s-e-preferences together with their risk-taking propensity and the expected support by parents appear to be the main factors forming students' s-e-intentions in HK. These results are robust to changes in the model specification and have a high statistical power.

However, for the emerging city economy of GZ, a completely different picture emerges: Of the classical traits variables, only benefit-related need for achievement and need for independence have the expected statistically significant positive effect on students' s-e-intentions. A rather remarkable result is that risk-taking propensity has no significant impact (neither on s-e-preferences nor on s-e-intentions) in GZ. Moreover, although there are various role models and high levels of expected support by personal networks in GZ, they appear to have little impact on students' s-e-intentions. In line with expectations, subject of study and gender have a robust, statistically significant impact on s-e-intentions in both HK and GZ. Students of computer science, in particular, have significantly lower intentions to become self-employed than others, which is likely to reflect their better opportunities to be hired as well-paid wage employees, whereas male students have significantly higher intentions to become self-employed than female students. While the latter result is standard in the literature, our two-stage approach reveals an interesting difference between GZ students and HK students: In HK, male students have higher s-e-preferences and higher s-e-intentions than female students; that is, their higher s-e-intentions are driven by desirability and feasibility considerations. In GZ, by contrast, female students have, on average, as positive an attitude towards self-

employment as male students; that is, it is only feasibility considerations that explain female students' lower s-e-intentions in GZ.

How could the striking differences between HK and GZ students be explained? Given the close cultural ties between HK and GZ and given the fact that differences between the two samples with respect to the personal traits considered are overall very small, cultural factors are unlikely to be a main factor. Hence, we have to take differences in graduate labor market prospects and differences in reliability and quality of legal and business environments in HK and GZ into account. In particular, there are several indications in the data suggesting that the comparatively poor labor market situation for GZ graduates might play a crucial role here:

First, with almost 60 percent of all students, the share of GZ students who have clear s-e intentions is extremely high and much higher than for HK students. While this may be partially explained by the very vivid private sector economy in Guangdong which offers a lot of self-employment opportunities, it is likely to also reflect a high share of students that anticipate that they may be pushed into self-employment as they may not be able to find an appropriate salaried job after graduation. A high share of "forced" self-employment is likely to dilute the relationship between students' personal traits and networks and their self-employment intentions.

Second, very uncertain salaried employment and career prospects for graduates and manifold opportunities for self-employment in current China may also explain why students' risk-taking propensity has no significant effect on either their s-e-preferences or their self-employment intentions in GZ: Self-employment may simply not be considered more risky than salaried employment under the prevailing economic conditions.

Third, while GZ students do on average expect more support from personal networks than HK students, the level of expected support does not generally have a significant effect on GZ students' self-employment intentions. There are two possible (and complementary) explanations here. First, if expected support from personal networks is nearly ubiquitously available (i.e. no scarce factor) it is not pivotal in forming self-employment intentions. Second, under the current economic circumstances in China, it is likely that support from personal networks is not only important to deal with the challenges of starting and running a business, but may likewise raise the possibility of finding adequate salaried employment.

Overall, the results suggest that self-employment intentions in HK are largely opportunity-driven and very much resemble those in Western countries, whereas self-employment intentions among students in GZ are often necessity-driven and differ substantially from what is observed in HK or in advanced Western economies.

*The broader perspective*

Our findings and interpretations are in line with other studies comparing students' entrepreneurial intentions in advanced industrialized countries and in emerging economies (see e.g. Kristiansen and Indarti, 2004; Bruton et al., 2008; Naudé, 2010; Brünjes and Revilla-Diez, 2013). Of particular interest in this context is the insightful study by Kristiansen and Indarti (2004), in which they compare university students' entrepreneurial intentions in a developing country (Indonesia) and an advanced industrialized country (Norway). The principal research design of their study is comparable to our investigation and the demographic and personal characteristics of the students in their sample (those in the Indonesian sample in particular) are very similar to ours.

Very much in line with our results, they find that entrepreneurial intentions of students in the developing country (Indonesia) are significantly higher than in the advanced industrialized country (Norway), and they relate this finding to the high unemployment and the clearly worse labor market and wage prospects for Indonesian students as compared to their Norwegian counterparts: "people are more likely to enter self-employment when they are unemployed or dissatisfied with their conditions as employees, or have reasons to expect higher earnings as entrepreneurial self-employed individuals" (Kristiansen and Indarti, 2004, p. 72).

In line with this interpretation is their finding that Indonesian students with better prospects of wage employment (students of business administration and economics) have significantly lower entrepreneurial intentions than students of social sciences: a result that resembles our findings for students of computer sciences in HK and for students of computer sciences, economics and engineering in GZ (see Table 3). Moreover, Indonesian students expect stronger support from social networks (in terms of knowledge and access to capital) if they decide to become entrepreneurs, and this "instrumental readiness" (Kristiansen and Indarti, 2004, p. 72), together with personal traits, appears to be the most important determinant of entrepreneurial intentions, whereas the explanatory power of age and individual background (education and previous employment experience) is rather low. Overall, and while there are some differences in detail, the findings for Indonesian students strongly support our main findings and the ensuing policy suggestions for GZ students.

## V. Conclusion

Based on unique data from carefully designed and executed student surveys in HK and GZ, the present paper makes several contributions to the literature on entrepreneurship

in intercultural and institutional contexts. The methodological approach goes beyond state of the art analyses of entrepreneurial intentions in distinguishing between self-employment preferences (reflecting the desirability of self-employment) and self-employment intentions (reflecting both desirability and feasibility). By focusing on HK and GZ with their similar cultural backgrounds, our analysis minimizes problems relating to mixing up cultural and institutional influences on the determinants of graduate entrepreneurship that are prevalent in most existing comparative analyses of entrepreneurial intentions in developing and developed economies.

The empirical findings show that the determinants of students' self-employment intentions (and preferences) differ substantially between HK and GZ, suggesting that differences in labor market prospects and in the reliability and maturity of legal and business environmentsmight be more important than cultural (dis-) similarities in determining the key factors relevant for the formation of self-employed intentions. In particular, there are several indications that the difficult labor market situation for university graduates in GZ might play a crucial role in explaining the observed differences between GZ and HK. Relatedly, the findings suggest that the factors underlying entrepreneurial intentions differ substantially depending on the predominant form of entrepreneurship (opportunity entrepreneurship versus necessity entrepreneurship) in a country or region.

Current research on students' entrepreneurial intentions emphasizes factors that "pull" people into entrepreneurship (such as need for independence, risk-taking propensity, opportunity perception or role models) and tends to neglect "push factors" (such as threat of unemployment after graduation). In other words, the current literature on students' entrepreneurial intentions is strongly focused on opportunity-driven entrepreneurship and (largely) neglects the forming of necessity-driven entrepreneurial intentions (see also Naudé, 2010; Brünjes and Revilla-Diez, 2013). Our results for HK as well as earlier research suggest that state-of-the-art models of entrepreneurial intentions with their focus on opportunity-driven entrepreneurship work well in explaining self-employment intentions in the context of advanced market economies. The results of this paper also show, however, that these models work less well in the context of an emerging (city) economy such as GZ, which is both geographically and culturally very close to HK, but differs substantially in terms of labor market condition and of the quality of legal and business environments. Hence, there is scope for future research to develop and test models of necessity-driven entrepreneurial intentions, fitting contexts with poor prospects of salaried employment and low opportunity costs of self-employment.

Moreover, our findings have important implications for policy. They make it clear

that policies promoting entrepreneurship currently implemented in industrialized economies may not be that effective in China due to the differences in the maturity of the legal and business environments and differences in labor market conditions between China and these countries. It is, thus, highly relevant to check whether the essential institutions are present before adopting entrepreneurship-promoting policies such as those implemented in industrialized economies. China may instead look at emerging or transition economies that have successfully implemented policies to promote entrepreneurship over the past decades. The environment for starting and doing business in these countries (at that time) may be more comparable to current China, such that China can better refer to their experiences while designing its own policies to encourage graduate entrepreneurship.

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(Edited by Xiaoming Feng)