DRAFT 2016 November 14

**Entrepreneurship Research**

**– a graduate course for training analysis, using data from Global Entrepreneurship Monitor**

**Time and place**

28 November to 16 December; Monday 9:00-12, Wednesday 13:00-16, Friday 9:00-12 (27 hours).

East China Normal University (Campus: \_ Building: \_ Room \_ ).

**Teacher**
Professor Thomas Schøtt, Department of Entrepreneurship and Relationship Management, University of Southern Denmark. tsc@sam.sdu.dk

**Purpose and content**

The course is intended for graduate students (and researchers) with a research interest in entrepreneurship. The learning objective is to enhance the ability to address research questions in entrepreneurship by analyzing quantitative data. The purpose of the Ph.D. course is to train participants in research on entrepreneurship by analyzing data from Global Entrepreneurship Monitor, GEM. GEM is the world’s major survey of people’s involvement in entrepreneurship and institutional framework conditions in about a hundred countries around the world, with data on adults, entrepreneurs, and countries freely available, www.gemconsortium.org .

**Format**

We discuss recent research publications, train analysis, and each student taking the course for credit selects a research question about people’s entry into entrepreneurship or about entrepreneurs’ work, and researches it under guidance by the instructor, using SPSS (or other statistical software), resulting in an analysis suitable for academic presentation and publication. In preparation for meeting in the course, participants must read literature on entrepreneurship research, and do exercises.

**Prerequisites**

Each participant selects an own research question about people’s entry into entrepreneurship or about entrepreneurs’ work, and researches it under guidance by the instructor in the course, using SPSS, resulting in an analysis suitable for academic presentation and publication.

**Credits and requirements**

Students may take the course for credit (36 credit hours) or may audit, but also required to study. Students who audit will pass or fail according to participation and the first 6 required home-works. Students taking the course for credit are required to submit 8 home-works and final research paper. Students taking the course for credit will be graded according to their participation, 8 home-works, and final research paper.

**Literature**

***Required readings:***

Acs et al. 2014. National systems of entrepreneurship. *Research Policy* 43, 476-494.

Baughn, C.C., Chua, B., & Neupert, K. E. (2006). The normative context for women's participation in entrepreneruship: A multicountry study. *Entrepreneurship:* *Theory and Practice*, 30(5), 687-708.

Bjørnskov, C., & Foss, N. J. (2008). Economic freedom and entrepreneurial activity: Some cross-country evidence. *Public Choice, 134*(3-4), 307-328.

Blachflower, D. and Oswald, A. (1998). What makes an entrepreneur? *Journal of Labor Economics,* 16, 26-60.

Bowen, H. P., & De Clercq, D. (2008). Institutional context and the allocation of entrepreneurial effort. Journal of International Business Studies, 39(4), 747-767.

Cheraghi, M. 2013. Innovation by entrepreneurs in China: The increasing prominence of women, International Journal of Knowledge-Based Innovation in China, 5, 3: 172-187.

<http://www.emeraldinsight.com/journals.htm?articleid=17101224&ini=aob>.

Cheraghi, M. (in press). Young entrepreneurs pushed by necessity and pulled by opportunity: Institutional embeddedness in economy and culture, International Journal of Entrepreneurship and Small Business.

Editors. 2011. Publishing in AMJ: Parts 1, 2, 3 (Setting the hook), 4 (Grounding hypotheses), 5, 6, 7. *American Management Journal*, 54, 5, 873-879 (and 2 before and 4 after).

GEM Manual: Design, Data and Quality Control.

GEM Questionnaire for Adult Population Survey.

GEM Questionnaire for National Expert Survey.

Hessels, J., Van Gelderen, M., & Thurik, R. (2008). Entrepreneurial aspirations, motivations, and their drivers. *Small Business Economics*, 31(3), 323-339.

Jensen et al. 2014. Cognitive effects on entrepreneurial intentions: A comparison of Chinese émigrés and their descendants with non-émigré Chinese. International Journal of Entrepreneurship and Small Business, 23, 1/2: 252-277.

Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, 31(1), 21-37.

McMullen, J. S., Bagby, R. D., & Palich, L. E. (2008). Economic freedom and the motivation to engage in entrepreneurial action. *Entrepreneurship: Theory and Practice*, 32(5), 875-895.

Pinillos, M., & Reyes, L. (2011). Relationship between individualist-collectivist culture and entrepreneurial activity: Evidence from Global Entrepreneurship Monitor data. *Small Business Economics*, in press.

Ramos-Rodríguez, A., Medina-Garrido, J., Lorenzo-Gómez, J., & Ruiz-Navarro, J. (2010). What you know or who you know? the role of intellectual and social capital in opportunity recognition. *International Small Business Journal*, 28(6), 566-582.

Schøtt et al. 2015. Talent among Chinese entrepreneurs at home and abroad. In: Entrepreneurship and Talent Management from a Global Perspective: Global Returnees, ed. by Huiyao Wang and Yipeng Liu. Edward Elgar Publ., 62-91.

Schøtt et al. 2015. Chinese entrepreneurs’ human and social capital benefiting innovation: In China and in the Chinese diaspora. International Journal of Business and Globalisation, 16, 3: 350-377.

Schøtt et al. 2015. People’s human and social capital benefiting careers in entrepreneurship: Adults in China and Chinese diaspora. International Journal of Business and Globalisation, 16, 3: 378-400.

Schøtt et al. 2014. Firms’ innovation embedded in their networks of collaboration: China compared to the World. Journal of Chinese Economic and Business Studies,12, 3: 273-292.

Schøtt, T., et al. 2014. Innovation embedded in entrepreneurs’ networks in private and public spheres: A global study focusing on China and Denmark. International Journal of Entrepreneurship and Small Business, 23, 1/2: 145-167.

***Recommended for browsing and selective reading:***

Arenius, P., & Clercq, D. D. (2005). A network-based approach on opportunity recognition. *Small Business Economics*, 24(3), 249-265.

Arenius, P., & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. Small Business Economics, 24(3), 233-247.

Bosma, N. 2012. ‘The Global Entrepreneurship Monitor (GEM) and its impact on entrepreneurship research’. Working paper distributed by email to the class; and published in Foundations and Trends in Entrepreneurship, 9, 2: 143-248 (2013).

De Clercq, D., & Arenius, P. (2006). The role of knowledge in business start-up activity. *International Small Business Journal*, 24(4), 339-358.

De Clercq, D., Danis, W. M., & Dakhli, M. (2010). The moderating effect of institutional context on the relationship between associational activity and new business activity in emerging economies. *International Business Review, 19*(1), 85-101.

De Clercq, D., Lim, D. S., & Oh, C. H. (2011). Individual-level resources and new business activity: The contingent role of institutional context. *Entrepreneurship:* *Theory and Practice,*

Levie, J., & Autio, E. (2008). A theoretical grounding and test of the GEM model. *Small Business Economics*, 31(3), 235-263.

Stenholm, P., Acs, Z.J., & Wuebker, R. (2013). Exploring country level institutional arrangements on the rate and type of entrepreneurial activity. *Journal of Business Venturing*, 28(1), 176–193.

Davidsson, P. Entrepreneurship Research.

GEM Special Reports on Women, Education, High-Growth, Financing, Entrepreneurial Employee Activity, Social Entrepreneurship, and Youth.

Schøtt edited special issue on entrepreneurs’ networks in International Journal of Business and Globalisation, vol 11, no 4 (2013).

Schøtt et al. 2016. Mass entrepreneurship in China: Increasing inclusion of women, educated, and adults. Submitted.

Schøtt et al. 2016. Entrepreneurs’ intertwined education, networking with researchers, and business collaboration: Benefits for innovation in China. Submitted.

Schott et al. 2016. Innovation and life-satisfaction: Embedded in networks and marketization in the provinces in China. Submitted.

Schøtt et al. 2015. Reproduction of gender gaps throughout the entrepreneurial career: Disadvantages and benefits. International Journal of Gender and Entrepreneurship, 7, 3: 321-343.

Schøtt et al. 2016. Firms’ innovation benefiting from networking and institutional support: A global analysis of national and firm effects. Research Policy, 45, 1233-1246.

Schøtt et al. 2014. Innovation embedded in entrepreneurs’ networks and national educational systems: A global study. Small Business Economics, 43, 2: 463-476.

Stephan, U. and Uhlaner, L. (2010) Performance-based vs socially supportive culture: A cross-national study of descriptive norms and entrepreneurship. *Journal of* *International Business Studies* 41, 1347–1364.

Sternberg, R., & Wennekers, S. (2005). Determinants and effects of new business creation using Global Entrepreneurship Monitor data. *Small Business Economics*, 24(3), 193-203.

Tominc, P., & Rebernik, M. (2007). Growth aspirations and cultural support for entrepreneurship: A comparison of post-socialist countries. *Small Business* *Economics*, 28(2-3), 239-255.

Uhlaner, L., & Thurik, R. (2007). Postmaterialism influencing total entrepreneurial activity across nations. *Journal of Evolutionary Economics, 17*(2), 161-185.

Vaillant, Y., & Lafuente, E. (2007). Do different institutional frameworks condition the influence of local fear of failure and entrepreneurial examples over entrepreneurial activity? *Entrepreneurship and Regional Development*, 19(4), 313-337.

Wong, P. K., Ho, Y. P., & Autio, E. (2005). Entrepreneurship, innovation and economic growth: Evidence from GEM data. *Small Business Economics*, 24(3), 335-350.

**Schedule:**

**WEEK 1. PEOPLE BECOMING ENTREPRENEURS**

**Monday, 28 Nov, 9:00-12:00**

**Topic: The ‘entrepreneur’ as a social role in society.**

In this first class, we will discuss what entrepreneurship is, and what an entrepreneur is. Also in this class, we will examine how many people become entrepreneurs in China and in other countries, by analyzing our data, so bring your laptop with our data and preferably also with SPSS installed. *Reading required before coming to this class:*

Blachflower, D. and Oswald, A. (1998). What makes an entrepreneur? *Journal of Labor Economics,* 16, 26-60.

Global Entrepreneurship Monitor’s website [www.gemconsortium.org](http://www.gemconsortium.org) so you understand GEM. *Recommended reading:*

Chinese documents about mass entrepreneurship, which you may find. Is the policy for the masses or for the elite?

Schøtt’s power-points on methodology and statistics, as needed (emailed to you).

 **Homework 1** is an exercise in analyzing people’s intentions to become entrepreneur.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday November 29.

**Wednesday, 30 Nov, 13:00-16:00**

**Topic: Education and training for becoming an entrepreneur.**

In this class, we continue to consider how people become entrepreneurs, namely by education and training through which they acquire entrepreneurial competencies, i.e. human capital such as self-efficacy, opportunity-alertness and risk-willingness, and social capital such as knowing a starter who can provide tacit knowledge and can become a role-model and mentor. Also in this class, we will examine how education and training benefit competencies in China and other countries, by analyzing our data, so bring your laptop with our data and preferably also SPSS.

*Reading required before coming to this class:*

De Clercq, D., & Arenius, P. (2006). The role of knowledge in business start-up activity. *International Small Business Journal*, 24(4), 339-358.

Jensen et al. 2014. Cognitive effects on entrepreneurial intentions: A comparison of Chinese émigrés and their descendants with non-émigré Chinese. *International Journal of Entrepreneurship and Small Business*, 23, 1/2: 252-277.

Schøtt et al. 2015. People’s human and social capital benefiting careers in entrepreneurship: Adults in China and Chinese diaspora. *International Journal of Business and Globalisation*, 16, 3: 378-400.

*Recommended reading:*

Arenius, P., & Clercq, D. D. (2005). A network-based approach on opportunity recognition. *Small Business Economics*, 24(3), 249-265.

Arenius, P., & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. *Small Business Economics*, 24(3), 233-247.

Blachflower, D. and Oswald, A. (1998). What makes an entrepreneur? *Journal of Labor Economics,* 16, 26-60.

Bosma, N. 2012. ‘The Global Entrepreneurship Monitor (GEM) and its impact on entrepreneurship research’. Working paper distributed by email to the class; and also published in *Foundations and Trends in Entrepreneurship*, 9, 2: 143-248 (2013).

Schøtt et al. 2015. Reproduction of gender gaps throughout the entrepreneurial career: Disadvantages and benefits. *International Journal of Gender and Entrepreneurship*, 7, 3: 321-343.

**Homework 2** is an exercise in analyzing people’s entrepreneurial behavior.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 1.

**Friday, 2 December, 9:00-12:00**

**Topic: Institutions as context for entrepreneurs.**

In this class, we will discussion how the process of becoming an entrepreneur is embedded in the context of institutions in society, institutions that enable and constrain the process of becoming an entrepreneur. Also in this class, we will examine how institutions moderate the benefit of education for becoming an entrepreneur, by analyzing our data.

*Reading required before coming to this class:*

Acs et al. 2014. National systems of entrepreneurship. *Research Policy* 43, 476-494.

Cheraghi, M. 2013. Innovation by entrepreneurs in China: The increasing prominence of women, *International Journal of Knowledge-Based Innovation in China*, 5, 3: 172-187.

<http://www.emeraldinsight.com/journals.htm?articleid=17101224&ini=aob>.

*Recommended reading:*

Baughn, C.C., Chua, B., & Neupert, K. E. (2006). The normative context for women's participation in entrepreneruship: A multicountry study. *Entrepreneurship:* *Theory and Practice*, 30(5), 687-708.

Bjørnskov, C., & Foss, N. J. (2008). Economic freedom and entrepreneurial activity: Some cross-country evidence. *Public Choice, 134*(3-4), 307-328.

Bowen, H. P., & De Clercq, D. (2008). Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies*, 39(4), 747-767.

De Clercq, D., Danis, W. M., & Dakhli, M. (2010). The moderating effect of institutional context on the relationship between associational activity and new business activity in emerging economies. *International Business Review, 19*(1), 85-101.

De Clercq, D., Lim, D. S., & Oh, C. H. (2011). Individual-level resources and new business activity: The contingent role of institutional context. *Entrepreneurship:* *Theory and Practice,*

McMullen, J. S., Bagby, R. D., & Palich, L. E. (2008). Economic freedom and the motivation to engage in entrepreneurial action. *Entrepreneurship: Theory and Practice*, 32(5), 875-895.

Pinillos, M., & Reyes, L. (2011). Relationship between individualist-collectivist culture and entrepreneurial activity: Evidence from Global Entrepreneurship Monitor data. *Small Business Economics*, in press.

**Homework 3** analyzes national institutions affecting people’s entrepreneurial behavior.

Email your answer to tsc@sam.sdu.dk before 6 pm on Sunday, December 4.

**WEEK 2. ENTREPRENEURS’ WORK**

**Monday, 5 December, 9:00-12:00**

**Topic: The pull of opportunity and the push of necessity.**

This class considers entrepreneurs’ major motives, the pull of seeing an opportunity to do business and the push by the need to make a living, especially when it is difficult to find a job. We will also investigate how motives in China have changed and compare to motives in other countries, using our data.

*Reading required before coming to this class:*

Cheraghi, M. (in press). Young entrepreneurs pushed by necessity and pulled by opportunity: Institutional embeddedness in economy and culture, *International Journal of Entrepreneurship and Small Business*. (emailed to you).

Hessels, J., Van Gelderen, M., & Thurik, R. (2008). Entrepreneurial aspirations, motivations, and their drivers. *Small Business Economics*, 31(3), 323-339.

*Recommended reading:*

McMullen, J. S., Bagby, R. D., & Palich, L. E. (2008). Economic freedom and the motivation to engage in entrepreneurial action. *Entrepreneurship: Theory and Practice*, 32(5), 875-895.

**Homework 4**  is an exercise in analyzing entrepreneurs’ motives.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday December 6.

**Wednesday, 7 December, 13:00-16:00**

**Topic: Entrepreneurs’ innovation affected by personal and organizational characteristics.**

This class focuses on the entrepreneurs’ performance in form of innovation. We will also investigate how innovation is affected by personal background such as motives, education and competencies and by firm characteristics such as size and age of the business, using our data.

*Reading required before coming to this class:*

Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, 31(1), 21-37.

Schøtt, T., et al. 2014. Innovation embedded in entrepreneurs’ networks in private and public spheres: A global study focusing on China and Denmark. *International Journal of Entrepreneurship and Small Business*, 23, 1/2: 145-167.

*Recommended reading:*

Schøtt et al. 2015. Chinese entrepreneurs’ human and social capital benefiting innovation: In China and in the Chinese diaspora. *International Journal of Business and Globalisation*, 16, 3: 350-377.

Find and read about “mass innovation” in China. Is the policy for the masses or elitist?

**Homework 5** is an exercise in analyzing entrepreneurs’ innovation.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 8.

**Friday, 9 December, 9:00-12:00**

**Topic: Institutions supporting innovation by entrepreneurs.**

In this class we discuss how national institutions, including culture, are influencing entrepreneurs’ work such as their innovation. We also analyze how institutions moderate the benefit of education for innovation.

*Reading required before coming to this class:*

Schøtt et al. 2014. Firms’ innovation embedded in their networks of collaboration: China compared to the World. *Journal of Chinese Economic and Business Studies*, 12, 3: 273-292.

Schøtt et al. 2016. Firms’ innovation benefiting from networking and institutional support: A global analysis of national and firm effects. *Research Policy*, 45, 1233-1246.

*Recommended reading:*

Schøtt et al. 2014. Innovation embedded in entrepreneurs’ networks and national educational systems: A global study. *Small Business Economics*, 43, 2: 463-476.

**Homework 6** ( is an exercise in analyzing institutional effects upon innovation.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Sunday December 11.

**WEEK THREE: YOUR OWN RESEARCH**

**Monday, 12 December, 9:00-12:00**

**Topic: Formulating a research question and specifying a design for research.**

In this class, you begin your own research by first formulating your own question for your own research, using our data.

*Reading required before coming to this class:*

Editors. 2011. Publishing in AMJ: Parts 1, 2, 3 (Setting the hook). *American Management Journal*, 54, 5, 873-879 (and 2 before).

*Recommended reading:*

**Homework 7** (not required of students auditing) is an exercise in proposing research. Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday December 13.

**Wednesday, 14 December, 13:00-16:00**

**Topic: Presenting research**

In this class, the students taking the course for credit will present (with a one-page power point) their research question and design for research (5 minutes each presentation, plus 5 minutes for constructive comments and suggestions). Also in this class, we will discuss how to report a study in an article.

*Reading required before coming to this class:*

Editors. 2011. Publishing in AMJ: Parts 4 (Grounding hypotheses), and 5. *American Management Journal*, 54 and/or 55.

*Recommended reading:*

**Homework 8** (not required of students auditing) is an exercise in reporting an analysis. Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 15.

**Friday, 16 December, 9:00-12:00**

**Topic: Presentation, by each student taking the course for credit, of their research question, design, and first analysis**, using a power-point (10 minutes each presentation, plus 5 minutes for discussion).

*Reading required before coming to this class:*

Editors. 2011. Publishing in AMJ: Parts 4 (Grounding hypotheses), and 5. *American Management Journal*, 54 and/or 55.

*Recommended reading:*

**Final research paper** (Email the final research paper to tsc@sam.sdu.dk by December 20).

This is not required from students auditing the course.

Students taking the course for credit are required to conduct an own analysis and report it in an internationally publishable paper totaling 3,000-5,000 words, authored by the student alone, with the following contents, and numbered sections:

Title (informative) (10-15 words)

Author name, email, and institutional address

Abstract (100-200 words)

1. Introduction (stating the research question) (300-1000 words)

2. Theoretical background and hypotheses (500-1000 words)

3. Research design (400-1000 words)

4. Results (reporting analyses with figures, tables) (1000-2000 words)

5. Conclusion (300-1000 words)

References (300-500 words)

Email the final research paper to tsc@sam.sdu.dk by December 20.

**Homework 1** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday November 29).

Schøtt’s power-points as needed (emailed to you).

Read the questionnaire for the Adult Population Survey (APS) (emailed to you).

Type answers to the following questions:

1. Which question in the questionnaire measures whether a person is intending to start a business?

Type your answer here: \_

2. What is the scale of measurement for this question? Is the scale numerical (with naturally meaningful numbers), or is the scale a dichotomy (with just two possible answers), or is the scale categorical (3 or more categories, without naturally meaningful numbers).

Type your answer here: \_

3. Start the statistical software SPSS (you may have it on your laptop, or perhaps in a lab, or perhaps a friend has it on a laptop). Open our data file ADULTS1.SAV in SPSS.

4. What percentage of adults is intending to start a business? (click Analyze, click Descriptive Stats, click Frequencies, …). (use the document ‘Description of data’ for interpreting output).

Type your answer here: \_

5. Which gender would you hypothesize is more inclined to start, women or men?

Type your answer here: \_

6. Which variable measures gender?

(use the document ‘Description of data’ for interpreting output).

Type your answer here: \_

7. What number is used for coding women? What number is used for coding men?

Type your answer here: \_

8. What percentage of women are intending to start? (click Analyze, click Descriptive Stats, click Crosstab, move the variable for intention into the box for Row, move the variable for gender into the box for Column, click on Cells, check the box for getting percentages within columns, click Continue, click OK, and you should see a crosstabulation).

Type your answer here: \_

9. What percentage of men are intending to start?

Type your answer here: \_

10. Is your hypothesis supported?

Type your answer here: \_

11. Would you say there a big, or a small, or no gender inequality?

Type your answer here: \_

Email your answers to tsc@sam.sdu.dk before 6 pm on Tuesday, November 29.

**Homework 2** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 1).

Use Schøtt’s power-points as needed (emailed to you).

1. Who has most education, would you hypothesize, women or men?

Type your answer here: \_

2. How is education measured? Dichotomy, categorical, numerical?

Type your answer here: \_

3. Test your hypothesis by comparing women’s mean education to men’s mean.

(click Analyze, click Compare means, move education into the top box, gender into the bottom box, OK).

4. Which gender has most education?

Type your answer here: \_

5. Does this support your hypothesis?

Type your answer here: \_

6. State your conclusion in a sentence.

Type your answer here: \_

7. Who has most education, would you guess, old people (around 60) or young people (around 30)?

Type your answer here: \_

8. In other words, is age affecting education positively or negatively, would you hypothesize?

Type your answer here: \_

9. Test your hypothesis by a correlation (click Analyze, Correlation, move the two variables into the box, …)

(click Analyze, Correlation, move the two variables into the box, OK). What is the correlation coefficient?

Type your answer here: \_

10. Is the correlation positive or negative?

Type your answer here: \_

11. Does this support your hypothesis?

Type your answer here: \_

12. State your conclusion in a sentence.

Type your answer here: \_

13. Make a linear regression of education upon age and gender.

Draw conclusions.

Type your answer here: \_

14. Make a logistic regression of intention upon age, education and gender.

Draw conclusions.

Type your answer here: \_

15. Make a logistic regression of self-efficacy upon age, education and gender.

Draw conclusions.

Type your answer here: \_

16. Make a logistic regression of opportunity-perception upon age, education and gender.

Draw conclusions.

Type your answer here: \_

17. Make a logistic regression of intention upon self-efficacy, opportunity-perception, age, education and gender.

Draw conclusions.

Type your answer here: \_

Email your answers to tsc@sam.sdu.dk before 6 pm on Thursday, December 1.

**Homework 3** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Sunday December 4).

Use Schøtt’s power-points as needed (emailed to you).

1. In China, has entry into entrepreneurship increased or decreased? Test this by first selecting the data from China, and then calculate the correlation between time (variable YRSURV) and people’s entry (variable TEA of the respondents).

2. In China, is entry positively or negatively correlated with education (variable EDY)?

3. In S. Korea, has entry into entrepreneurship increased or decreased?

4. In S. Korea, is entry positively or negatively correlated with education?

5. In Japan, has entry into entrepreneurship increased or decreased?

6. In Japan, is entry positively or negatively correlated with education?

7. Where is the rate of entry highest and lowest, among China (mainland), Taiwan, Hong Kong, S. Korea, Japan? Estimate this from the full file by comparing means (average) of entry (variable TEA) according to country (variable CTRYALP).

8. Where, in the world, is the rate highest and lowest? Estimate this from the full data by a model as follows. Click Analyze, Mixed model, click linear, move CTRYALP into box for Subject, click Continue. Move TEA into box for Dependent variable. Move CTRYALP into box for Factor. Click Fixed effect, and switch from Factorial to Main effect, add CTRYALP into the model, and click Continue. Click on Statistics, mark Parameter estimates, and click Continue. Click OK.

On the output you should see estimates that tell which country is highest and which is lowest.

9. Include Education into this model. Do the same again, and move EDY into the box for Covariate, and also add EDY as a fixed effect, as a main effect.

10. In the world as a whole, is the effect of education positive or negative (or insignificant)?

11. Include the interaction of education and country into this model. Do the same model as just done, and add, as Interaction (not main effect), the two variables EDY and CTRYALP (highlight both simultaneously, and then add them, so the interaction is seen as EDY\*CTRYALP).

12. For which country is the interaction highest? Interpret this.

13. For which country is the interaction lowest? Interpret this.

Email your answer to tsc@sam.sdu.dk before 6 pm on Sunday, December 4.

**Homework 4** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday December 6).

1. Are entrepreneurs’ motives in China similar to motives in neighboring countries such as Japan and S.Korea? Analyze this, using the file of data on entrepreneurs in the world, by cross-tabulating country (CTRYALP in column) and motive (REASONOP in row), with percentages within each column.

2. In the world, have entrepreneurs’ motives changed over the years? Analyze this, using the file of data on entrepreneurs in the world, by correlating time (YRSURV) and motive (REASONOP).

3. In China, have entrepreneurs’ motives changed over the years? Analyze this by subsetting the data on entrepreneurs in China, and then correlating time and motive.

4.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday December 6.

**Homework 5** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 8).

1. Construct the index of innovation, as a combination of process innovation (NEWTECR), product innovation (NEWCSTR), and uniqueness (COMPET).

2. What is the correlation of your index with NEWTECR? Negative or positive?

3. What is the correlation of your index with NEWCSTR? Negative or positive?

4. What is the correlation of your index with COMPET? Negative or positive?

5. In the world, how is innovation affected by gender, age, education, and competencies?

6. In the world, how is innovation affected by characteristics of the business?

7. In China, how is innovation affected by gender, age, education, and competencies?

8. In China, how is innovation affected by characteristics of the business?

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 8.

**Homework 6** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Sunday December 11).

1. In the world, how is GNI (per capita) moderating personal and organizational effects on innovation?

2. …

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Sunday December 11.

**Homework 7** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday December 13).

This homework is not required of students auditing the course.

1. Formulate your own research question.

2. What is the “population” (persons, country, etc)?

3. What is the sample?

4. What is the dependent variable of major interest?

5. What is the independent variable of major interest?

6. What is your major hypothesis?

7. How is the dependent variable measured?

8. How is the independent variable measured?

9. Which technique will you use for analysis (cross-tab, correlation, compare means, regression, mixed model, etc.)?

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Tuesday December 13.

**Homework 8** (answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 15).

This homework is not required from students auditing the course.

1. Revision of your research question and design (i.e. revision of homework 7).

2. Do your first analysis, and report it.

Answer to be emailed to tsc@sam.sdu.dk before 6 pm on Thursday December 15.