Seminar Economics of Human Capital
Science vs. ChatGPT

Summer Term 2024
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Course Description

This seminar deals with topics related to human capital and the potential of artificial intelligence (AI) to answer complex questions related to these topics. Students use ChatGPT (or a different AI-based bot) to write an essay about a topic in the economics of human capital. Participants then use their own independent (human) thinking to assess the information obtained from the bot and write their own essay about the topic. This essay is based on a review of academic literature on the assigned topic and tries to correct or improve the information obtained from the bot where necessary.

The seminar has two consecutive parts. In the first part, **students write a thesis** under the guidance of their advisor. The thesis documents the ChatGPT-written essay and the students' essay (based on academic literature). While writing their thesis, students are expected to search for literature and work independently on their topic. Advisors provide close guidance during this process. The second part consists of a **blocked seminar** (**June 13**) of students' presentations. Before preparing their presentations, supervisors will provide students with detailed feedback on their thesis.

Organizational details and grading

- Students should have passed Econometrics before participating.
- To express your interest, please submit the registration form to **lea.mayer@fau.de until March 25, 2024.**
- Topics will be assigned to students by March 28, 2024. Please note that the maximum number of participants is 6 students. After being assigned to a specific topic, students can repeal their participation within a week's time. After that deadline has passed, participation in the seminar is mandatory. Students not handing in a thesis in time will fail the seminar.
- We will have a short introduction over Zoom on April 15, 2024, at 17:00. Additional information on how to write a seminar paper, how to search for literature, etc. will be provided in this introductory session.
- The deadline for submitting the seminar theses is May 27, 2024.
- Grading: The overall grade will reflect the quality of the thesis (50%), the presentation in the seminar (30%), and the student's contributions to the discussion following each of the presentations (20%). To pass the seminar, students must obtain at least a grade of 4.0 in each of the parts.

List of Topics

1. **Professional Networks and Team Formation**
   Ask ChatGPT about the role of homophily in team formation: Do individuals which are similar in terms of characteristics and traits form teams more often. How does observed homophily impact team performance? In which way does homophily impact diversity in entrepreneurship? Contrast responses to your own independent research.
   Literature: Gompers, P. A., Huang, K., & Wang, S. Q. (2017). Homophily in Entrepreneurial Team Formation, NBER Working Paper No. 23459.

2. **The Effect of Refugees on Educational Outcomes**
   You compete with ChatGPT in explaining how refugee classmates affect the educational outcomes of students. For instance, you could ask questions like the following: Do refugees affect educational outcomes of their classmates? What could be a driver of such an effect? How can selection into school be taken into consideration when estimating that effect?
   Literature: Figlio, D., & Umut Ö. (2019). Unwelcome guests? The effects of refugees on the educational outcomes of incumbent students. Journal of Labor Economics 37.4, 1061-1096.

3. **Gender Differences in Job Preferences**
   You try to beat ChatGPT in explaining gender differences in preferences of different amenities of jobs. You could ask: Do men and women evaluate non-wage characteristics of job offers differently? Do the gender differences in job preferences affect the gender wage gap? How could an experiment help to understand the preferences?
   Literature: Wiswall, M., & Zafar, B. (2018). Preference for the workplace, investment in human capital, and gender. Quarterly Journal of Economics, 133(1), 457-507.

4. **Differences in Beliefs about Postgraduate Education**
   Ask ChatGPT about differences in beliefs about postgraduate education, and compare answers to your independent research. Are there significant differences in perceptions regarding pecuniary and non-pecuniary benefits of postgraduate education among students? What role do current undergraduate experiences play in shaping students' beliefs? Do you see differences between first-generation and continuing-generation students?
   Literature: Boneva, T., Golin, M., & Rauh, C. (2021). Can perceived returns explain enrollment gaps in postgraduate education? Labour Economics, 77, 2022.

5. **Challenging Stereotypes: Impact on Educational Choices and Occupational Outcomes**
   Let ChatGPT explain what effect stereotypes and biased beliefs have on college major choice and occupational outcomes, and then try to do better. Questions to be asked include: How do stereotypes regarding specific fields of study impact students' perception that their chosen major will lead to a corresponding job? What are the economic implications of students' misperceptions about the relationship between college majors and occupations? Do such biased beliefs vary depending on factors such as gender or socioeconomic background?
   Literature: Conlon, J. and Patel, D. (2023). What Jobs Come to Mind? Stereotypes about Fields of Study. Mimeo, Princeton University.

6. **Beliefs about wages and major choice**
   You try to beat ChatGPT in explaining whether misinformation about salaries is related to students' major choice and whether correcting false beliefs has an influence on major choice. Are students correctly informed about salaries in their field? If No, can providing information alter major choices? What are the key parts of such an information experiment?
   Literature: Conlon, J. J. (2021). Major malfunction: A field experiment correcting undergraduates' beliefs about salaries. Journal of Human Resources, 56(3), 922-939.