Department of Sociology
The Chinese University of Hong Kong

Sociology @ CUHK Seminar Series

Embedded Differentiation: Generative AI Exposure and Occupational Structure in China

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HKT

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Prof. Yuxiao Wu is a professor of sociology in School of Social and Behavioral Sciences at Nanjing University. He employs quantitative methods to examine various dimensions of social stratification, including income and wealth inequality, educational and occupational attainment, and social mobility. His current research examines how digital technologies and artificial intelligence shape labor market structures and patterns of social stratification and mobility. His work has been published in various journals, including *British Journal of Sociology, Chinese Sociological Review, American Educational Research Journal, Social Sciences in China, Chinese Journal of Sociology,* etc.

Does exposure to generative artificial intelligence simply reflect existing occupational hierarchies, or does it constitute a new dimension of occupational differentiation? This study examines how the alignment between occupational tasks and large language model capabilities maps onto established structures of work and inequality in China.

Drawing on task descriptions from China's national occupational classification and individual survey data collected in Guangzhou in 2023–2024, the study connects occupational measures of AI exposure, task composition, and digitalization with workers' social characteristics and resources. The findings reveal substantial but incomplete overlap between generative AI exposure and established occupational hierarchies. Task composition and digitalization explain approximately half of the variation in exposure, while persistent differences remain among occupations with comparable socioeconomic standing. Exploratory analysis identifies six occupational profiles with distinct combinations of exposure and task characteristics. These profiles differ systematically in education, income, digital tool use, employment security, and social composition, with educational qualifications marking the clearest social boundary.

The concept of "embedded differentiation" captures this coexistence of structural embeddedness and distinctions within established hierarchies. By treating exposure as potential technological reach rather than observed adoption or job displacement, this study offers a sociological perspective on how generative AI intersects with occupational differentiation and social stratification.

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