Measuring financial inclusion: a multiple correspondence analysis approach

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Financial inclusion (FI) has emerged as a key concept in the literature on economic development in the mid-2000s. Theoretically defined as the access and usage of financial services by individuals, empirical measurement of FI is still deficient. To date, only two studies provide a multi-dimensional measurement of FI using micro-level data. However, they face several weaknesses, as one employs principal component analysis for reducing binary variables, and the other overlooks two important aspects: the handling of missing values and the lack of outcome variation due to selected variables. These problems lead to biased results. This paper aims to eliminate the bias by providing a robust measurement of individual's FI using micro-level information. The selected database, the World Bank's Findex, provides information on bank access, credit and savings for around 1,000 individuals in 150 countries for 3 years. As variables are categorical, multiple correspondence analysis (MCA) is the most appropriate method to reduce dimensions. The generated row scores are used for two key purposes: first, to build an aggregated country-level index, which ranks countries by their level of FI, and second as the dependent variable in a repeated cross-sectional regression on the determinants of FI, using individual's characteristics. While the former shows that developed countries have higher levels of FI, the latter shows that being a woman reduces FI, while income and educational levels increase individuals' inclusion. Thus, the paper presents a novel measurement of FI, investigates its determinants, and examines the relationship among financial services and the differences among countries.