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Title: Exploring firm competitiveness: a factor analysis approach



This paper proposes a novel indicator of firm competitiveness across countries. This is relevant and necessary because productivity remains to date the most commonly used indicator of good performance at both the macro and micro level. However, a consensus on what is a good definition of productivity is still missing, since no definition really captures all aspects of production, especially its dynamic nature.

The concept of competitiveness is not new; it has been described in the economic and business literature as a multidimensional concept. However, most attempts to build competitiveness indicators have resulted in the creation of macroeconomic indicators. Yet, Porter (1998) states that “it is the firms, not nations, which compete in international markets”. An indicator of firm competitiveness is therefore missing.

Since competitiveness is a latent concept, we propose to use a latent variable model, confirmatory factor analysis (CFA), to summarize the multidimensional aspect of firm competitiveness in one indicator. Latent variable models are widely used in many disciplines, including machine learning/artificial intelligence, management and the social sciences. CFA differs in spirit from classical regression analysis as it emphasizes covariances rather than individual variables. Factor analysis focuses on uncovering and making use of the relationship among observed indicators in order to measure a latent concept: competitiveness.

Based on empirical evidence and a review of the literature, we propose a competitiveness framework. Consequently, we test this framework using CFA on firm level data from World Bank Enterprise Surveys for 100 countries of different development status. The results suggest that, while being more comprehensive, the resulting indicator is positively correlated with commonly used proxies of competitiveness, such as labour productivity or the probability to export. It also applies to firms of different size and to both exporting and non-exporting firms.

By measuring and comparing the competitiveness of firms of different size, among countries of different development, the index proposed in this paper contributes to measuring progress on growth and the reduction of inequalities, and therefore SDG 10. Our index confirms that the performance gap between large and small firms is higher in lower income countries than in richer countries.