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New Approach to Measuring Skill Shortages: Insights from the Chilean Labour Market

Skills shortages are a critical global challenge, undermining productivity, innovation, and economic growth. Factors such as rapid technological advances, demographic shifts, and evolving labour market dynamics intensify mismatches between employer needs and workforce skills. If not addressed early, skill shortages can cause long-term harm; once severe, solutions become more expensive, complex, and slow. This research introduces a novel approach to measuring skill shortages in the Chilean labour market by utilising quasi real-time data from online job advertisements and jobseeker CVs (2017–2020) from Chile. Few studies have used CV-based data for this purpose, offering a fresh perspective. Techniques from text mining, Machine Learning, and Large Language Models extracted valuable information on salaries, required skills, experience levels, and other labour attributes.

These data formed a composite "Skill Shortage Index" derived from ten variables: offered salaries, salary expectations ratio, vacancy-to-worker ratio, required years of experience, intensity of cognitive skills demanded, intensity of socioemotional skills demanded, years of experience requested, skill-experience volatility, and length of job advertisements postings. The index serves as an early detection system, highlighting occupations with skill shortage signals, establishing a methodological framework that can be adapted to other labour markets.

This study contributes to the literature by presenting an innovative method for measuring skill shortages in a middle-income country. It demonstrates that online data can enhance the measurement of skill shortages and complement traditional survey-based methods. The approach offers insights into Chile's labour market and provides a model for other nations facing similar challenges. The research underscores the importance of real-time labour market monitoring and suggests that such methods can enable a preventive approach to identifying emerging skill shortages before they become critical and provide actionable insights for policymakers.

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