






Predicting Career Trends in Vietnam's Labor Market Through News-Based Sentiment Analysis


Ha Thi Thu Nguyen
 <http://orcid.org/0000-0003-4414-6944>
FPT University, Vietnam

Hoang Anh Tuan
 <http://orcid.org/0009-0004-1344-9285>
Thuongmai University, Vietnam

Le Thi Tram Anh
 <http://orcid.org/0009-0009-2839-8552>
Thuongmai University, Vietnam

Vu Ngoc Tu
 <http://orcid.org/0009-0007-8403-9058>
Thuongmai University, Vietnam

Duong Nguyen Thanh Thuy
 <http://orcid.org/0009-0005-9678-611X>
Thuongmai University, Vietnam

Long Duc Nguyen
 <http://orcid.org/0009-0000-7554-8407>
Vietnam Academy of Science and Technology, Vietnam

Received: October 30th, 2025 | **Accepted:** January 30th, 2026

ABSTRACT

Traditional forecasting methods that depend on official surveys and macroeconomic data often lag behind real-world developments, missing early indicators of change. To address this gap, this study utilizes unstructured Vietnamese news articles as an alternative information source. By applying natural language processing and sentiment analysis, it extracts employment-related signals of optimism or concern and converts them into predictive features. The proposed occupation sentiment ranking algorithm integrates occupation extraction and sentiment analysis to detect real-time shifts in labor market dynamics. Empirical findings reveal that news-based sentiment significantly enhances prediction accuracy and responsiveness, particularly during times of disruption. This research provides a timely and effective early-warning framework for Vietnam's labor market, offering actionable insights for policymakers, universities, and job seekers navigating the challenges of the digital economy.

KEYWORDS

Predicting, Career, NLP, Sentiment Analysis, Skills

INTRODUCTION

The global labor market is becoming increasingly competitive as artificial intelligence (AI) reshapes skill requirements, occupational structures, and employment opportunities. For employees, career trajectories are now strongly influenced by their ability to adapt to new technologies and acquire the competencies demanded in the digital economy (Zhang, 2025; Zarifhonarvar, 2024). At the same time, students face critical choices in selecting university disciplines that align with emerging labor market needs, as traditional career paths are being disrupted by automation and AI-driven innovation (Zhou, 2025). In this context, universities play a decisive role in preparing future workers (Deming & Silliman, 2024; Karakatsanis et al., 2017). Beyond providing academic knowledge, they are responsible for designing curricula that reflect labor market trends, embedding digital and interdisciplinary skills,

DOI: 10.4018/IJABIM.402698

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

and ensuring graduates are equipped to navigate rapid technological change. When universities act as career predictors and advisors, by leveraging labor market data, forecasting tools, and close collaboration with industry, they can anticipate emerging fields and provide students with guidance to select disciplines that align with future opportunities (Dawson et al., 2020; Riauwindu & Zlatev, 2024; Zhang, 2025). This proactive approach enables students to make informed decisions about their studies and careers, thereby reducing the risk of skill mismatch and unemployment (Kopackova, 2024; Zhou, 2025).

In the context of a rapidly changing society and economy, forecasting future career trends in Vietnam has become a central concern for macroeconomists, ministries, and particularly for students making career choices (Khuong et al., 2025; Tran Hai et al., 2025). Although the unemployment rate among the working-age population is projected to decline to 2.86% by 2025 (*Employment*, n.d.), significant challenges remain, especially in sectors that have not kept pace with technological advancements. The digital transformation is creating numerous opportunities for economic growth and innovation, but it also imposes higher demands on the workforce's skills, adaptability, and digital literacy (Nguyen-Phung et al., 2024; Riauwindu & Zlatev, 2024).

The existing approaches to career forecasting in Vietnam have largely relied on labor force surveys, expert opinions, and macroeconomic indicators provided by the General Statistics Office (*Employment*, n.d.). Although these datasets are authoritative and widely used, their delayed publication limits their usefulness in detecting sudden labor market shocks triggered by global crises, technological disruptions, or sector-specific layoffs. To overcome this limitation, scholars have begun to explore alternative data sources, with particular attention to unstructured digital information such as news articles, which can provide more timely signals of labor market dynamics (Khousa & Atif, 2018). News articles often contain timely insights into firm activities, labor demand, policy changes, and public sentiment that can serve as early warning signals of labor market fluctuations. Advances in natural language processing (NLP) and sentiment analysis allow these signals to be systematically extracted and transformed into predictive features for economic forecasting (Dhawan & Tyagi, 2024; Erbay et al., 2025; Yang & Chang, 2023).

This study aims to answer the question of whether machine learning (ML) techniques and text mining can be effectively applied to forecast career trends in Vietnam's labor market. To overcome the limitations of delay in forecasting or determining the trend of the labor market, this study proposes two methods: first, the study determines the occupation of interest by analyzing the frequency of articles. Second, the occupation sentiment ranking algorithm (OSRA) integrates two core components: occupation extraction and sentiment analysis. Occupation-related terms are first identified in news articles using a predefined set of occupation words, and sentences containing these terms are classified according to their associated occupations. Sentiment analysis is then applied to these occupation-specific sentences in order to quantify whether the surrounding context reflects positive expectations or negative outlooks. To calculate the sentiment score, this study used OpenAI to calculate the sentiment for Vietnamese languages. By aggregating sentiment scores across all relevant sentences, OSRA generates a ranked list of occupations, reflecting their growth potential or decline in the labor market.

The remainder of this paper is organized as follows. The second section provides a review of relevant literature on labor market forecasting, the role of AI, and the use of text mining in economic research. The third section outlines the research methodology, including data collection and sentiment analysis, applied in the study. The fourth section presents the empirical results, highlighting the performance of different forecasting models. The fifth section discusses the findings in relation to existing studies and their implications for policymakers. Finally, the last section concludes the paper and suggests directions for future research.

20 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/article/predicting-career-trends-in-vietnams-labor-market-through-news-based-sentiment-analysis/402698

Related Content

The Mediating Role of Entrepreneurial Orientation Between Relational Capital and Firm Performance: Evidence From Iranian SMEs

Alireza Jalali (2023). *International Journal of Asian Business and Information Management* (pp. 1-19).

www.irma-international.org/article/the-mediating-role-of-entrepreneurial-orientation-between-relational-capital-and-firm-performance/318338

Corporate Recognition Award and Reputation Dimensions on Corporate Reputation Consequences: A Critical Review on Bangladesh

(2021). *International Journal of Asian Business and Information Management* (pp. 0-0).

www.irma-international.org/article//273896

Empowering Local Village Community Enterprises in Thailand: A Possible Model for China and South - East Asia

Prapeeporn Sawasduang (2013). *International Journal of Asian Business and Information Management* (pp. 46-56).

www.irma-international.org/article/empowering-local-village-community-enterprises/77828

The Effects of Brand Cognition Process in Automobile Marketing in the Developed Countries

Gautam Dutta and Abhishek Dutta (2019). *International Journal of Asian Business and Information Management* (pp. 65-77).

www.irma-international.org/article/the-effects-of-brand-cognition-process-in-automobile-marketing-in-the-developed-countries/216920

E-Recruitment in Emerging Economies

Pramila Rao (2011). *Global Business: Concepts, Methodologies, Tools and Applications* (pp. 635-642).

www.irma-international.org/chapter/recruitment-emerging-economies/54795