

Robot Revolution: Challenges and Opportunities in Accounting Measurement

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[https://doi.org/10.35609/gcbssproceeding.2025.1\(16\)](https://doi.org/10.35609/gcbssproceeding.2025.1(16))

ABSTRACT

Robotization is profoundly reshaping the economic and organizational fabric, bringing significant advances in efficiency, productivity, and cost reduction. However, this transformation also presents substantial challenges for financial accounting, especially in the measurement and reporting of robotic work that needs to adapt to accommodate the complexity inherent in robotic systems. This study aims to explore methodologies for measuring the economic impact of automation, aligning traditional accounting principles with the demands of technological innovation. The research was based on a narrative literature review, focusing on theoretical and practical approaches to integrating robotic systems in financial statements. Key topics analyzed include the classification of tangible and intangible assets, depreciation and amortization methods specific to hybrid assets, and the incorporation of key performance indicators (KPIs) adapted to the reality of automation. This analysis revealed gaps in traditional accounting practices, especially in the reliable recording of implementation and maintenance costs and associated risks, such as cybersecurity. The results show that accurate measurement of robotic work improves the accuracy of financial records and provides a solid basis for strategic decisions, promoting greater organizational transparency. This advance is crucial in sectors where robotics plays a key role, such as in industry, services, health, and defense, where operational and strategic practices are constantly changing due to technological integration. The main conclusion of the work suggests that a dynamic and adapted accounting approach is essential to keep up with technological advances and respond to the growing demands for sustainability and innovation. This study contributes significantly to the field of financial accounting, providing practical tools for recording and analyzing the impact of robotics, and reinforcing its importance as a strategic element in organizational competitiveness.

JEL Codes: M41, O33, L23

Keywords: *Financial Accounting, Measurement, Robotization*