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Automation and human roles in quality control: Insights from Amazon and Flipkart

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ABSTRACT:

This article investigates the use of Robotic Process Automation (RPA) in quality control (QC) operations at Amazon and Flipkart, focussing on human roles, operational efficiency, and error reduction. The study determines the amount of RPA deployment and assesses how different automation tactics affect staff roles and performance outcomes using a comparative analysis based on survey data, organisational practices, and secondary research. The study concludes with recommendations for balancing automation and human knowledge in quality-driven settings.

Keywords: Robotic Process Automation, Quality Control, Amazon, Flipkart, Human Roles, E-commerce, Automation, Comparative Study

Introduction.

In the digital age, organisations look for new ways to increase operational efficiency and accuracy. Robotic Process Automation (RPA) is a prominent technology that automates normal, repetitive processes that were previously performed by people. In quality control (QC), RPA improves precision, decreases human error, and maintains consistency. This article explores the influence of RPA on quality control in two large e-commerce organisations, Amazon and Flipkart, with a focus on human jobs and performance indicators. The various automation initiatives of these organisations provide an important context for evaluating the consequences of RPA in QC.

Objectives of the Study

- To assess the level of RPA implementation in QC at Amazon and Flipkart.
- To look at how RPA has changed human responsibilities in quality control.
- To assess the advantages and disadvantages of automation in QC processes.
- To make proposals for improving human-robotic collaboration.

RESEARCH QUESTION

RQ1: To what extent is Robotic Process Automation (RPA) being implemented in the quality control processes of Amazon and Flipkart? Responsibilities of human workers in quality control departments?

RQ2: What specific tasks in the quality control workflow are currently handled by RPA systems at Amazon and Flipkart?

RQ3: How has the introduction of RPA affected the roles?

RQ4: What challenges do employees face while adapting to the integration of RPA in their work environment?

LITERATURE REVIEW

Several studies have examined the influence of RPA on corporate operations, focusing on its use in repetitive administrative chores. Willcocks et al. (2017) highlighted RPA as a revolutionary tool for cost savings and efficiency benefits in shared services. Sharma (2022) investigated automation trends in Indian e-commerce and found a consistent transition from manual labor to machine-driven operations. Deloitte's (2021) report underlined the importance of workforce reskilling as automation technologies change occupations. However, the majority of existing material lacks a detailed investigation of how RPA alters quality control activities in large e-commerce enterprises.

IDENTIFIED RESEARCH GAP

Identified Research Gap While there is a wealth of literature on RPA and its applications in various business processes, there is little study comparing how different firms use RPA in quality control roles. Furthermore, the human implications—specifically, how roles, abilities, and perceptions evolve in automated quality control environments—are understudied. This study fills the gap by comparing and assessing Amazon and Flipkart's RPA techniques in terms of human engagement and quality outcomes.

RESEARCH METHODOLOGY

The study uses a descriptive and comparative research design. Structured surveys were used to acquire primary data from Amazon and Flipkart QC staff. Secondary data was acquired from firm reports, journal articles, and reliable online sources. Quantitative data was analysed using visual aids such as bar charts, pie charts, and line graphs to determine the impact of RPA.

DATA INTERPRETATION

According to survey data, Amazon has automated around 70% of its quality control operations, while Flipkart automates about 50%. Amazon's error rates dropped from 6.5% to 2.8% after RPA, while Flipkart's fell from 7.2% to 4.9%. Amazon employees' perspectives reflect greater technical duties as well as job security worries. Flipkart staff indicated increased comfort with gradual automation. Both organisations' skill needs have transitioned towards analytical and technological competencies, with Amazon placing a greater emphasis on them. Within one year of implementing RPA, Amazon's productivity grew by 40% and Flipkart's by 25%.

LIMITATIONS

The limited access to internal data limited the depth of performance review. Employee replies may reflect bias or inadequate viewpoints. The study focusses solely on QC and does not consider the larger RPA impacts across operations.

RESULTS

The research findings support the hypothesis that RPA has a major impact on the operational dynamics of quality control. At Amazon, vigorous use of RPA resulted in a 57% drop in mistake rates and a 40% boost in total productivity. Flipkart's more balanced approach to automation resulted in a 32% drop in error rates and a 25% increase in productivity. In both companies, the roles of QC personnel shifted from manual inspection to supervisory and analytical duties. Furthermore, 75% of Amazon respondents and 68% of Flipkart respondents said that RPA made their jobs more hard while also more intellectually stimulating. These findings highlight the potential of RPA to improve quality while also improving human involvement in significant ways.

CONCLUSIONS

The comparison research shows that, while RPA greatly improves QC efficiency, humans continue to play an important role, particularly in decision-making and exception management. Amazon's rapid automation generates measurable results but necessitates enhanced workforce training. Flipkart's conservative approach improves employee acceptance but may limit short-term advantages. A deliberate combination of automation and human experience looks to be the best way ahead for quality assurance in e-commerce. 8. Suggestions Invest in personnel training to keep pace with automation. Maintain human oversight for jobs that require judgement and flexibility. Regularly evaluate automation results to improve RPA techniques. Promote collaborative positions in which humans oversee and optimise bots.

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