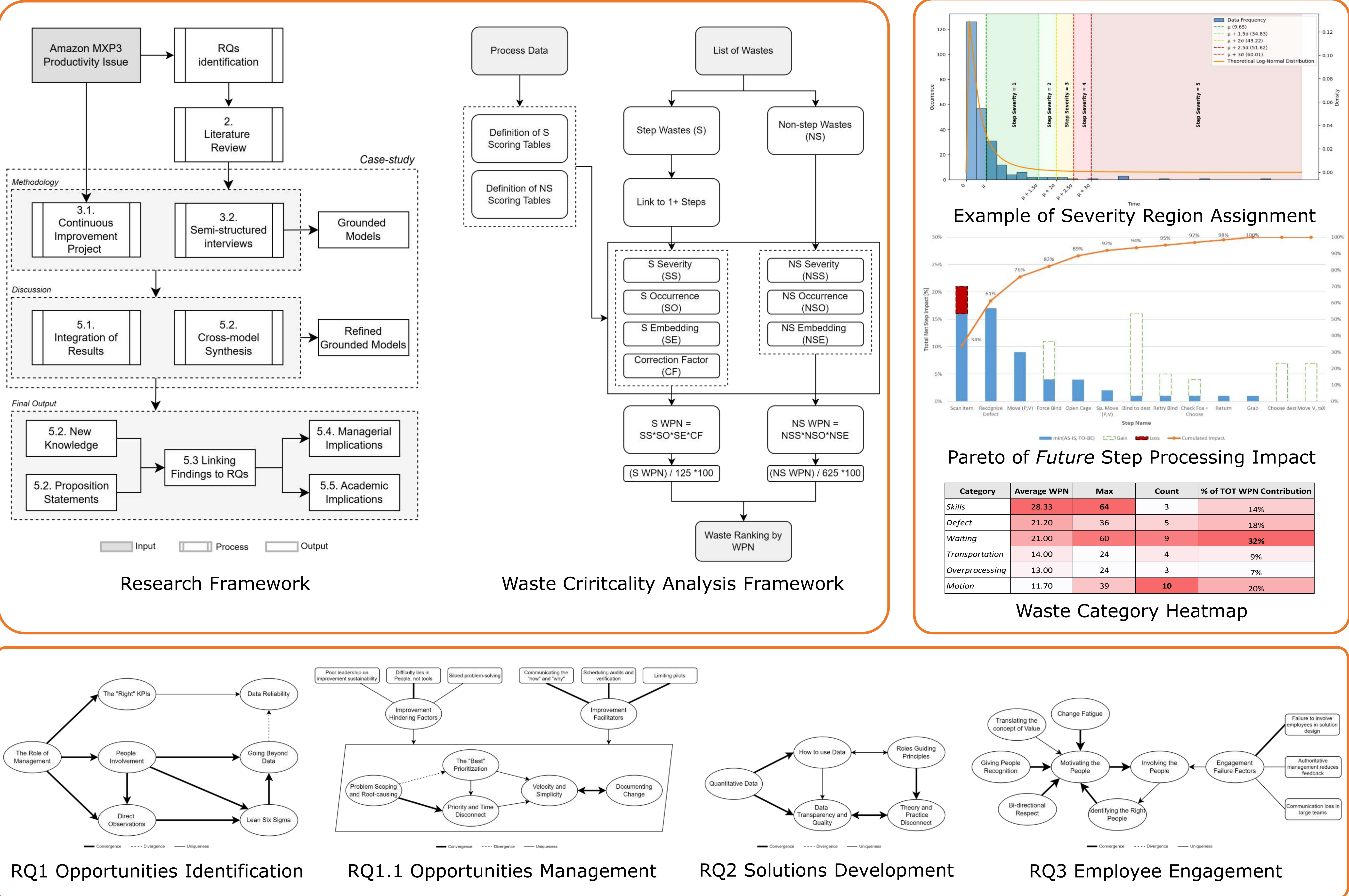


Double Degree Master's Thesis – Hochschule Luzern (HSLU) & University of Florence (UNIFI)

Enhancing Productivity Through Process Improvement:
A Case-Study Based Research In Fulfilment Centres Intra-Logistics



Problem Statement

Fulfilment centres are a critical backbone of logistics, yet their operations remain underexplored in academic research. At Amazon's MXP3 facility, persistent productivity challenges emerged in the inbound cross-docking department. While frameworks for productivity improvement and waste reduction exist, they remain too generic and lack applicability in complex, high-volume environments. In particular, little is known about how opportunities of improvement can be effectively identified and managed under resource constraints, how lean principles and data-driven approaches can be combined in the design of solutions, and how managerial practices together with employee engagement influence the success of such initiatives. This study addresses these gaps through a case-based research, linking evidence from a process improvement project with academic insights and semi-structured interviews to generate both theoretical contributions and actionable guidance for productivity improvement in fulfilment centre intra-logistics.

Methodology

The research adopts a case-based approach by integrating a CI project with 20 semi-structured interviews with researchers and practitioners, analysed with an adapted Gioia method. The analysis generated 4 grounded models. Every arc was validated and classified either as convergent, divergent, or unique, forming the basis for deriving new knowledge and 4 proposition statements.

Results

Results show that productivity opportunities are most effectively identified through a combination of KPI analysis, process observation, and employee involvement, which together ensure both evidence and context. Weaknesses in data reliability, however, remain a persistent concern. In managing opportunities, a problem-first, waste-oriented logic proved more efficient and sustainable than the solution-first approach still common in practice, though quick wins help to build trust and momentum.

Solution design was most effective when framed by lean principles and then validated with reliable data. Ultimately, the success of improvements depends on managerial approach and employee engagement, with recognition, respect, and credible leadership emerging as decisive enablers.

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