SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2026
ORGANIZATION AND MANAGEMENT SERIES NO. 250

READINESS FOR ADAPTATION IN THE CONTEXT OF ARTIFICIAL INTELLIGENCE IMPLEMENTATION IN PRODUCTION PLANNING

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Purpose: The purpose of this paper is to explore the readiness of production planning employees to adapt to the implementation of artificial intelligence (AI) in decision-making processes. The study investigates the roles that AI should perform in the company, employees' willingness to reorganize decision-making structures, and the alignment between expectations toward AI and the acceptance of organizational change.
Findings: The findings reveal that most respondents see AI as a supportive tool rather than an autonomous decision-maker. While there is a general openness to redefining individual roles in decision-making processes, there is significantly less support for changes in organizational hierarchies. Strategic planners are more open to AI integration than operational planners. Experience and familiarity with AI tools positively influence acceptance of changes.
Research limitations/implications: The study is limited to a sample of 104 professionals from the production planning sector, which may not be representative of all industries. Further research could explore broader sectors and analyze longitudinal changes in readiness over time. Additionally, deeper investigation into the causes of resistance to structural changes is recommended. These results are consistent with broader patterns in AI readiness observed in European manufacturing firms (Müller et al., 2023; Schroeder, Kinkel, 2022), highlighting both individual adaptability and organizational inertia.
Social implications: The study suggests that while AI is welcomed for its analytical capabilities, there is still societal hesitation regarding its decision-making autonomy. Addressing these concerns may improve public trust in AI technologies and support broader societal acceptance of AI-driven business transformations.
Originality/value: This paper provides a novel analysis of readiness for AI integration specifically within production planning. By distinguishing between strategic and operational planners, it adds value to the understanding of AI's impact on organizational roles and decision-making structures. The study offers practical insights for business leaders considering AI-driven changes in planning and management.
Keywords: Artificial Intelligence, Production Planning, Decision-Making Structures, Organizational Readiness, Human-AI Interaction.
Category of the paper: Research paper.

Introduction

This paper explores the readiness of production planning employees to adapt to the implementation of artificial intelligence (AI) in decision-making processes. Drawing on a survey of 104 industry professionals, the study investigates the roles defined by respondents that AI should perform in the company their willingness to reorganize decision-making structures, and the consistency between expectations toward AI and the acceptance of organizational change. The results reveal a strong preference for AI as a supportive tool rather than an autonomous decision-maker. While most respondents are open to redefining their roles, far fewer support structural changes in organizational hierarchies. Strategic planners exhibit more openness to AI integration than operational planners. The findings are discussed in light of current literature, highlighting areas of alignment and divergence, and offering practical recommendations for AI implementation in manufacturing environments. This article is structured as follows: following the introduction, Section 2 reviews relevant literature. Section 3 outlines the methodology, followed by results in Section 4, discussion in Section 5, and conclusions in Section 6. The importance of this topic stems from the accelerating deployment of AI in production environments and the growing need to understand human-AI collaboration dynamics. Despite growing interest in AI integration, relatively little is known about how employees in production planning perceive and respond to such changes. This constitutes a clear research gap.

Literature Review

A frequently addressed issue in the literature is how AI is perceived by its users. As Glikson and Woolley (2020) indicate, a key factor determining the effectiveness of AI implementation is employees' trust in its recommendations and belief in its competence. This trust is built on algorithm transparency, controllability, and positive user experiences. Janiesch et al. (2021) distinguish three levels of AI integration in decision-making processes: decision support, joint decision-making, and full autonomy. Each of these levels generates different organizational and competence requirements. At the decision-support level, AI serves as an analytical tool assisting humans in decision-making. In the joint decision-making model, humans and AI cooperate and share responsibility. Full autonomy assumes decisions are entirely made by AI, which raises the most controversy and resistance. In manufacturing enterprises, there are high expectations of AI focused on improving decision-making speed, scenario analysis, and schedule optimization. As Dwivedi et al. (2021) note, while employees often express positive attitudes towards technology, they are less willing to accept changes in their professional roles. Gursoy

et al. (2019) confirm these findings, pointing out the lack of correlation between the desire to use new technology and readiness to change roles in the decision-making process. The literature also references demographic and professional factors influencing readiness to adopt AI. Other factors such as professional experience, position in the organizational structure, and prior exposure to AI technologies also affect acceptance levels and perceived risks and benefits (Lichtenthaler, 2020). Numerous studies describe AI implementations in manufacturing enterprises and their impact on organizational structures. Zhang et al. (2022) discuss changes in decision-making structures in Chinese factories following the adoption of AI systems. New roles emerged, combining technological and managerial skills—positions like "AI Coordinator" or "Production Data Analyst". Bibby and Dehe (2018) also observed that employee readiness increases when implementation occurs gradually and involves end users. Heimberger et al. (2024) conducted a comprehensive review of factors influencing AI adoption in production systems, identifying both organizational and technological drivers. Similarly, Müller et al. (2023) proposed a conceptual approach for assessing AI-readiness in German manufacturing firms. Their frameworks are instrumental in shaping structured implementation strategies. Schroeder & Kinkel (2022) empirically linked AI-readiness to organizational resilience, providing insight into how companies can improve adaptability through structured AI deployment. Carutasu & Palade (2021) offer a model of organizational readiness that aligns with digital maturity frameworks. Many studies, including those by Ransbotham et al. (2020), MIT Sloan Management Review, and BCG, indicate that organizational barriers and employee attitudes are significant obstacles to AI implementation. Middle management attitudes, in particular, play a crucial role in the success of AI adoption.

Research Methodology

This study aimed to determine how employees in production planning perceive the role of AI in decision-making structures and how ready they are to reorganize their responsibilities and positions in light of potential AI implementation. An essential part of the study was recognizing how respondents view the role of AI in their tasks and their willingness to accept AI's involvement in decision-making.

The following research questions were posed:

- RQ1: What AI roles and functions are considered most desirable by employees in production planning?
- RQ2: How ready are employees to delegate decision-making responsibility to AI in various contexts?
- RQ3: What changes in decision-making and organizational structures are acceptable to the respondents?

The study used a questionnaire targeting professionals involved in production planning. It included closed-ended questions, where respondents assessed various proposals using a Likert scale across three areas: anticipated AI functions, level of acceptance of AI decision-making autonomy, and readiness for organizational changes. The questionnaire also included questions about job position, work experience, and familiarity with AI tools.

The survey was conducted online, and participation was voluntary and anonymous. The sample consisted of 104 respondents with varying levels of responsibility and experience in operational and strategic planning. During the study, incomplete and incorrectly filled out answers were rejected. Data were analyzed using descriptive and comparative statistics.

The survey method was chosen due to its suitability in capturing subjective attitudes and readiness assessments across a diverse population. Participants were recruited through professional networks and mailing lists targeting industry professionals. Data collection spanned eight weeks. Although the sample is not statistically representative of all industries, it provides meaningful insights into production planning contexts.

Research Results

The results show a wide range of attitudes toward AI. This variation concerns both the role AI should play in production planning and the readiness for change in workplace

Respondents had different levels of work experience and varying degrees of previous AI exposure. Operational planners tended to be more cautious—preferring AI to be limited to data collection, analysis, and scenario generation, with human verification. Those in higher roles were more open to joint decision-making and AI recommendations for long-term planning.

Work experience also influenced responses: more experienced individuals were more skeptical of full AI autonomy, while less experienced employees were more open to relinquishing some decision-making authority. Respondents with prior AI experience were more ready for changes and more trusting of AI-generated outcomes. They were also more willing to work in teams where AI systems handle analytical tasks.

The majority believed AI should play a supporting and analytical role—generating scenarios, aiding in scheduling, and identifying deviations. Only a minority supported decision-making roles, especially fully autonomous ones. About 70% were open to using AI in an advisory capacity, while only 15% accepted AI making independent decisions in typical operations The distribution of the above-mentioned responses is presented in Figure 1.

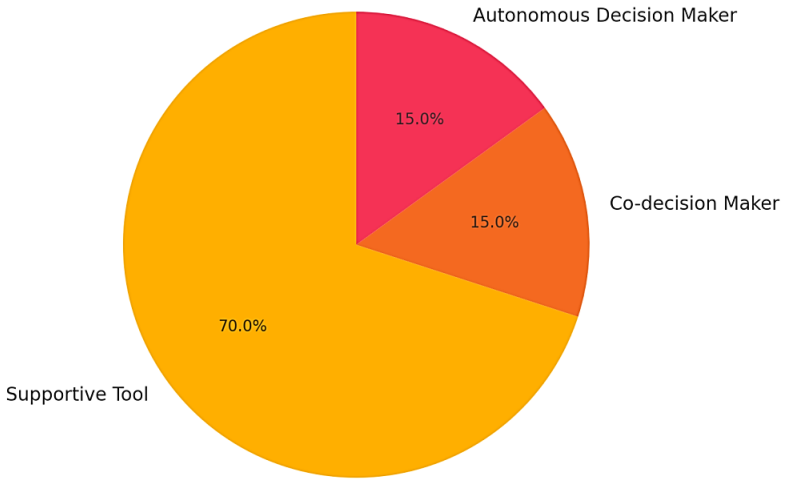

Figure 1. Preferred AI Roles in Decision Processes.

Source: Author's own study.

Readiness to introduce changes in decision-making structures varied: 62% accepted redefining planner roles (e.g., transferring analytical tasks to AI), but only 28% supported changes in formal organizational structures (e.g., creating dedicated AI cooperation teams). Managers were more open to structural changes than non-managerial staff. The distribution of the above-mentioned responses is presented in Figure 2.

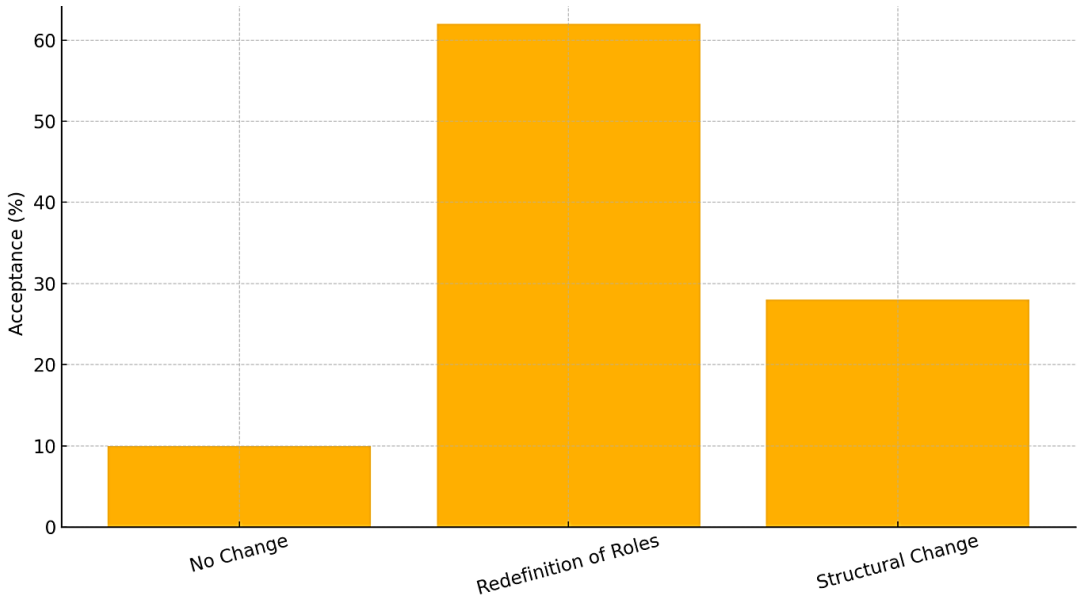

Figure 2. Readiness for Organizational Changes.

Source: Author's own study.

The discrepancy between expectations of AI and readiness for organizational change suggests respondents are attached to existing decision-making models. While they saw AI's value in forecasting and optimization, they were reluctant to change their roles or submit to AI decisions without human oversight.

Given that the largest groups of respondents were operational and strategic planners, a detailed comparison of their responses was conducted. Table 1 presents the distribution of responses from these survey groups in the context of the expected role that AI should play in the enterprise and their willingness to introduce changes in the decision-making structure. The differences between different planners were shown in Table 1.

Table 1.
Differences Between Operational and Strategic Planners

Planner Type	AI as Support (%)	AI as Co-Decider (%)	AI as Autonomous (%)	Role Redefinition Acceptance (%)	Structural Change Acceptance (%)
Operational Planner	78	15	7	55	20
Strategic Planner	65	25	10	70	40

Source: Author's own study.

Operational planners were more skeptical about AI autonomy and less inclined to accept changes in decision-making structures. Strategic planners were more open to shared decision-making and organizational restructuring. Nearly 80% of operational planners saw AI as a decision support tool, while only 7% allowed for full autonomy. In contrast, 25% of strategic planners supported joint decision-making and accepted the possibility of organizational change. More experienced respondents and those previously exposed to AI were more positively inclined toward adopting changes.

Discussion

The findings show a gap between the desire to reap AI benefits and the readiness to alter roles in planning decision-making processes. While participants recognize AI's decision-support potential, they remain wary of autonomous AI decision-making. Readiness to adapt depends on experience, job role, and prior AI exposure. This suggests a state of "adaptive caution", where employees are open to using AI under the condition of maintaining control. This confirms earlier research on the importance of building trust in AI systems (Glikson, Woolley, 2020; Jarrahi, 2018). Compared to previous studies, this research confirms that trust and task clarity are pivotal for AI acceptance. However, unlike Glikson & Woolley (2020), we observed a sharper contrast between openness to AI support and reluctance toward structural reorganization. This may reflect sector-specific conservatism in production planning. Future studies should investigate sectoral variability more deeply. To systematically cultivate trust in AI systems, organizations could implement a multi-stage trust-building framework, involving transparency measures, participatory design, continuous feedback loops, and formal AI training programs. Such structured approaches may bridge the gap between acceptance and active collaboration with AI. The results align with other studies regarding the importance of

trust but also reveal new challenges—high expectations from AI without a corresponding willingness to accept necessary structural changes.

Conclusions

The study revealed a generally positive attitude toward the use of artificial intelligence (AI) in production, especially in roles that enhance and support human decision-making. Most respondents preferred AI as a tool for data analysis, scenario generation, or identifying deviations, rather than as an autonomous decision-maker. This reflects a cautious openness to AI, rooted in a desire to maintain human oversight and control. While participants expressed interest in leveraging AI to improve efficiency, they showed greater willingness to adjust their individual roles than to support structural changes at the organizational level. Redefining responsibilities—such as delegating analytical tasks to AI—was more acceptable than introducing new formal roles or departments dedicated to AI cooperation. Differences in attitudes were also observed based on professional position and experience. Strategic planners were more receptive to integrating AI into long-term decision-making processes, whereas operational planners tended to be more sceptical and preferred clear human control over day-to-day execution. Additionally, individuals with previous exposure to AI systems demonstrated higher trust and readiness for adaptation. Although expectations toward AI were generally high, many respondents hesitated to support deeper transformations that would shift decision-making power or reorganize planning teams. This highlights a gap between the technological potential of AI and the social and organizational readiness for its full integration. Addressing this tension will require not only technical implementation but also active involvement of users, communication, and capacity-building within production environments. The presented research highlights a significant readiness gap in structural transformation related to AI use. While individual-level adaptation is relatively well accepted, systemic organizational change remains a challenge. These findings are relevant not only to production managers but also to AI system designers, who must consider organizational inertia. Limitations include the sample's size and scope. Further research should consider longitudinal tracking of AI-related adaptation across roles and sectors. These findings are reinforced by recent literature, which emphasizes that AI-readiness—both technical and cultural—is crucial for achieving resilience and long-term gains from AI implementation (Heimberger et al., 2024; Carutasu, Palade, 2021).

Acknowledgements

Publication funded by Poznan University of Technology, Faculty of Engineering Management - project number 0812/SBAD/4244.

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