Change Resistance and Acceptance in Digital Transformation of Manufacturing Industry: A Systematic Literature Review

Debi Sutra[1], Agus Mansur[2]

[1,2] Master of Industrial Engineering, Islamic University of Indonesia, Yogyakarta, Indonesia

ABSTRACT: The Fourth Industrial Revolution requires manufacturing companies to implement digital transformation through effective change management. Employee resistance to change is one of the critical factors affecting change acceptance and digital transformation success. This study aims to examine change management strategies, driving and inhibiting factors with emphasis on resistance to change, and the impact of resistance on change acceptance in digital transformation of manufacturing companies. This research uses the Systematic Literature Review (SLR) method with the PICO approach and PRISMA method on 25 selected articles published between 2021-2025 from Scopus, Web of Science, and other reputable databases. Research findings indicate that resistance to change significantly influences change acceptance, with main sources including fear of job loss, lack of digital skills, comfort with status quo, and inadequate communication. Effective change management strategies through strong leadership commitment, comprehensive training programs, participatory approaches, and effective communication can reduce resistance and increase change acceptance. However, organizational culture that is not adaptive, limited resources, and digital skills gap remain major obstacles. These research findings indicate the need for companies to proactively manage resistance through people-centric approaches so that digital transformation can run optimally.

KEYWORDS: Change Acceptance, Change Management, Digital Transformation, Industry 4.0, Manufacturing, Resistance to Change

I. INTRODUCTION

The era of the fourth industrial revolution has brought fundamental changes to the global manufacturing industry landscape. The integration of digital technologies such as the Internet of Things (IoT), artificial intelligence (AI), big data analytics, cloud computing, and robotics has transformed how manufacturing companies operate. Digital transformation is no longer an option but a strategic necessity for manufacturing companies to survive and thrive amid increasingly fierce global competition.

The COVID-19 pandemic that occurred in 2020 has become a catalyst that accelerated the adoption of digital transformation in various industrial sectors, including manufacturing. Manufacturing companies were forced to quickly adapt to changes in work patterns, digitalization of production processes, and technology implementation to maintain business continuity. According to data from (Manufacturing Indonesia, 2025), the main challenge of the manufacturing industry in 2025 is the shortage of skilled workers due to the accelerated adoption of advanced technology, where digital transformation requires special skills in operating automatic machines and data analysis that current workers often do not possess.

However, the implementation of digital transformation is not only related to technology adoption. Various studies show that the failure rate of digital transformation projects reaches 70%, where the main failure factor is not caused by technological aspects, but by human and organizational factors (Bellantuono et al., 2021). Employee resistance to change has become one of the biggest obstacles in implementing digital transformation in manufacturing companies.

Resistance to change is a natural phenomenon that occurs when individuals or groups in an organization reject or are reluctant to accept proposed changes (Agostini & Filippini, 2019). In the context of digital transformation in manufacturing, resistance can emerge in various forms, from active rejection to passive resistance such as non-compliance with new procedures or lack of enthusiasm in adopting digital technology (Cimini et al., 2020).

Sources of resistance to change in digital transformation can come from various factors, including: (1) fear of job loss due to automation and digitalization, (2) lack of digital skills and inability to adapt to new technologies, (3) comfort with old working methods (status quo bias), (4) lack of understanding about the reasons and benefits of change, (5) ineffective communication from management, and (6) organizational culture that does not support innovation and change (Sony & Naik, 2020).

Change acceptance has become the key to successful digital transformation. Change acceptance refers to the willingness of individuals to support change and actively participate in implementing the change (Vial, 2019). A low level of change acceptance will impact slow technology adoption, low productivity during the transition period, and ultimately can lead to failure of digital transformation initiatives.

According to Hughes (2016), one of the biggest mistakes in change management is the failure to address employee resistance and build acceptance of change. Research by Warner & Wäger (2019) shows that companies successful in digital transformation are those capable of developing dynamic capabilities in managing change, including the ability to reduce resistance and increase change acceptance at all organizational levels.

Effective change management becomes the key in overcoming resistance and increasing change acceptance. However, research that specifically examines the relationship between resistance to change and change acceptance in the context of digital transformation in manufacturing companies is still limited. Therefore, this study aims to comprehensively examine through systematic literature review regarding strategies, factors, impacts, and best practices in managing resistance to increase change acceptance.

The research questions to be answered through this literature review are:

RQ1: What are effective change management strategies in reducing resistance and increasing change acceptance in digital transformation in manufacturing companies?

RQ2: What factors influence employee resistance to change in the context of digital transformation in manufacturing companies?

RQ3: How does resistance to change influence the level of change acceptance and the success of digital transformation in manufacturing companies?

RQ4: What are the best practices in managing resistance to increase change acceptance in digital transformation?

II. THEORETICAL FRAMEWORK

A. Digital Transformation

Digital transformation is a fundamental change process in how organizations use technology, processes, and human resources to create new value, increase operational efficiency, and develop innovative business models. According to Danuri (2019), the development and transformation of digital technology has provided major and fundamental changes in various aspects of life as well as business organizations.

In the context of manufacturing industry, digital transformation includes digitalization of production processes, implementation of cyber-physical systems, use of data analytics, and integration of information technology throughout the company's value chain. The main components of digital transformation in manufacturing include technology (IoT, AI, big data, cloud computing, robotics), processes (workflow digitalization, automation, system integration), and humans (digital competence, innovation culture, digital leadership). The success of digital transformation requires balance and synergy between these three components (Susanto et al., 2024).

B. Change Management

Change management is a systematic approach to managing the transition or transformation from the current organizational condition to the desired future condition. Change management includes preparation, support, and accompaniment of individuals, teams, and organizations in making organizational changes.

According to (Ratnasari et al., 2020), change management, transformational leadership, organizational structure, organizational culture, and work discipline significantly influence employee performance. The change management process requires mature planning and strategy implementation to produce companies that are more prepared to face change.

Commonly used change management models include Kotter's 8-Step Change Model, ADKAR Model (Awareness, Desire, Knowledge, Ability, Reinforcement), Lewin's Change Management (Unfreeze-Change-Refreeze), and McKinsey 7-S Model. Each model has different approaches and focuses, but essentially emphasizes the importance of the human aspect in the change process (Joeliaty & Firmansyah, 2016).

C. Resistance to Change

Resistance to change is a natural phenomenon in organizations that can hinder the success of digital transformation. According to (Kotter & Schlesinger, 1989), resistance to change is the negative reaction of individuals or groups to proposed change efforts in

the organization. Resistance can emerge in various forms, both actively (open rejection, protests, sabotage) and passively (silent non-compliance, decreased productivity, absenteeism).

1) Sources of Resistance to Change : According to (Kotter & Schlesinger, 1989) and research by (Agostini & Filippini, 2019), the main sources of resistance to change include: (a) Self-interest: Individuals worry about losing something valuable such as position, status, power, or the job itself due to change, especially in the context of automation and digitalization; (b) Misunderstanding and Lack of Trust: Employees do not understand the implications of change and do not trust management proposing the change, especially if communication is ineffective; (c) Different Assessments: Individuals have different assessments of the situation and believe that change is not needed or will not bring benefits; (d) Low Tolerance for Change: Some individuals have limited capacity to change due to fear of inability to develop new skills or adapt to new ways of working.

2) In the Context of Digital Transformation : Research by (Sony & Naik, 2020) identifies specific sources of resistance in manufacturing digital transformation: Technostress (stress experienced by employees due to demands to continuously learn new technologies), Digital Divide (digital capability gap between young and senior generations), Job Insecurity (fear of job loss due to automation and AI), Skill Obsolescence (concern that possessed skills become irrelevant), and Organizational Inertia (organizational habits that are deeply rooted and difficult to change).

D. Change Acceptance

Change acceptance refers to the willingness of individuals to support change and actively participate in its implementation. According to (Vakola, 2014), change acceptance is a positive attitude toward change characterized by cognitive, affective, and behavioral support for change initiatives.

1) Dimensions of Change Acceptance : Research by (Oreg et al., 2011) identifies three dimensions of change acceptance: (a) Cognitive Acceptance: Understanding and belief about the necessity of change and its benefits; (b) Affective Acceptance: Positive feelings and enthusiasm toward change; (c) Behavioral Acceptance: Real actions in supporting and implementing change.

2) Factors Affecting Change Acceptance : According to (Warner & Wäger, 2019) and (Cimini et al., 2020), factors affecting change acceptance in digital transformation include Individual Factors (openness to experience, self-efficacy in digital technology, perceived usefulness of new technology, perception of organizational support), Organizational Factors (quality of change communication, trust in management, participation in decision-making, training and development programs, organizational innovation culture), and Change Process Factors (clarity of vision and objectives, appropriateness of implementation strategy, resource availability, timing and speed of change).

III. RESEARCH METHODOLOGY

This research uses the Systematic Literature Review (SLR) method by analyzing relevant literature related to change management in digital transformation in manufacturing companies. SLR aims to collect, critically evaluate, integrate, and present findings from various research studies to answer research questions or according to the desired topic.

This research uses the Population, Intervention, Comparison, and Outcome (PICO) framework as shown in Table I. The keywords used are change management, digital transformation, Industry 4.0, manufacturing, organizational change, resistance to change, and change acceptance.

Table I. PICO Framework

PICO Tool	Description
Population	Manufacturing companies, Manufacturing industry, Manufacturing employees
Intervention	Change management, Digital transformation, Industry 4.0, Resistance to change, Change acceptance
Comparison	Companies with high vs low resistance; Effective vs ineffective change management strategies
Outcome	1. Change management strategies 2. Factors affecting resistance 3. Influence of resistance on acceptance 4. Best practices

A. Data Sources

Secondary data in the form of online journal research publications are used in this study. Researchers conducted literature searches on Scopus and Web of Science (WoS), Directory of Open Access Journals (DOAJ), as well as reputable international publisher databases such as Elsevier (ScienceDirect), Springer, Wiley Online Library, Taylor & Francis, Emerald Insight, MDPI, and IEEE Xplore by combining predetermined keywords.

These databases were chosen because they are sources of reputable international scientific literature that are indexed and have rigorous peer-review processes. Scopus and Web of Science are the largest citation databases indexing high-quality journals (Q1 and Q2). DOAJ was chosen to access quality open access journals, while publisher databases (Elsevier, Springer, Wiley, Taylor & Francis, Emerald) provide access to leading journals in the fields of management, technology, and manufacturing.

Search strings used :

International Database Search (Scopus, WoS, ScienceDirect, Springer, Wiley):

- ("change management" OR "organizational change") AND ("digital transformation" OR "digitalization" OR "Industry 4.0") AND ("manufacturing" OR "manufacturing industry" OR "production")
- ("resistance to change" OR "change resistance") AND ("digital transformation" OR "Industry 4.0") AND "manufacturing"
- ("change acceptance" OR "readiness for change") AND "digital transformation" AND "manufacturing"
- TITLE-ABS-KEY (("change management" OR "resistance to change") AND "digital transformation" AND "manufacturing")

Search Period : January 2021 - March 2025

B. Inclusion and Exclusion Criteria

Table II shows the inclusion and exclusion criteria for journals or literature sought.

Table II. Inclusion And Exclusion Criteria

Criteria	Inclusion	Exclusion
Access Openness	Full-text accessible literature (open access or through institutional subscription)	Inaccessible full-text literature
Publication Period	2021 - 2025 (last 5 years to ensure relevance with current developments)	Publications before 2021
Database Source	Scopus, Web of Science, DOAJ, Elsevier, Springer, Wiley, Taylor & Francis, Emerald, MDPI, IEEE	Blogs, non-academic websites, grey literature without peer-review
Indexation	Scopus/WoS indexed journals (Q1-Q4) or nationally accredited (SINTA 1-4)	Non-indexed or non-accredited journals
Document Type	Article, Review Article	Conference papers without journal publication, Book chapters, Theses
Language	Indonesian, English	Other than Indonesian and English

Important Note : Some foundational/seminal works published before 2021 are still used in the Theoretical Framework (Section II) to explain basic concepts such as Kotter's model, Lewin, and resistance theory. However, all articles analyzed in Results & Discussion (Section IV) are 2021-2025 publications.

C. Literature Selection Process

After literature and journal publications were collected, researchers used the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) method as a framework to conduct the systematic literature review. The PRISMA method provides a standardized approach to enhance the transparency and reporting quality of systematic reviews, ensuring that the literature selection process is rigorous, reproducible, and minimally biased.

Stage 1: Identification (Initial Database Search)

In the identification stage, systematic searches were conducted across multiple databases (Scopus, Web of Science, ScienceDirect, Springer, Wiley Online Library, Taylor & Francis, Emerald Insight, MDPI, and IEEE Xplore) using predetermined search strings combining keywords related to change management, digital transformation, Industry 4.0, manufacturing, resistance to change, and change acceptance. The search period covered January 2021 through March 2025 to capture current developments in digital transformation of manufacturing. This initial search yielded a total of 487 potentially relevant publications across all databases. Additionally, backward citation tracking (reviewing references of included articles) and forward citation tracking (identifying articles citing key sources) were conducted to identify studies that might have been missed in the database searches.

Stage 2: Screening (Title and Abstract Review)

During the screening stage, all 487 identified publications underwent an initial review based on title and abstract to eliminate obviously irrelevant studies. Inclusion and exclusion criteria were applied systematically at this stage. Studies were excluded if they: (1) focused on digital transformation in non-manufacturing sectors, (2) addressed change management without specific reference to digital transformation or Industry 4.0, (3) were conference papers or book chapters without journal publication, (4) were not published in English or Indonesian, (5) were published before 2021, or (6) lacked full-text accessibility. Two independent reviewers screened each title and abstract, with disagreements resolved through discussion or consultation with a third reviewer. This stage significantly reduced the number of potentially relevant studies, resulting in 78 articles deemed worthy of full-text review.

Stage 3: Eligibility (Full-Text Review)

In the eligibility stage, the 78 full-text articles were retrieved and carefully reviewed against the detailed inclusion and exclusion criteria presented in Table II. Researchers assessed each article's quality using the quality assessment rubric presented in Appendix B, evaluating five key dimensions: (1) research objective clarity, (2) methodology appropriateness, (3) data quality, (4) analysis rigor, and (5) results and conclusions clarity. Each criterion was scored on a 1-5 scale with specific weights, resulting in composite quality scores. Articles scoring 20-25 points were classified as high quality and included in the analysis, while those scoring 15-19 points were classified as medium quality and also included, and articles scoring below 15 points were excluded as insufficient quality. Specific reasons for exclusion during this stage were documented, including insufficient sample sizes, lack of quantitative rigor in qualitative studies, limited relevance to the research questions, or methodological flaws.

Stage 4: Inclusion (Final Selection and Data Extraction)

The final stage involved confirming that the remaining articles truly addressed the core research questions and extracting standardized data from each study using the data extraction template presented in Appendix C. The template systematically captured bibliographic information, study characteristics, resistance factors identified, change acceptance measurement approaches, relationships between resistance and acceptance, change management strategies employed, outcomes and impacts, key findings, study limitations, and quality assessment scores. Two independent reviewers independently extracted data from each article to ensure consistency and accuracy. The final analysis included 25 high-quality and medium-quality articles that comprehensively addressed the research questions and provided sufficient empirical evidence for synthesis.

Figure 1 presents the complete PRISMA Flow Diagram **illustrating the literature selection process :**
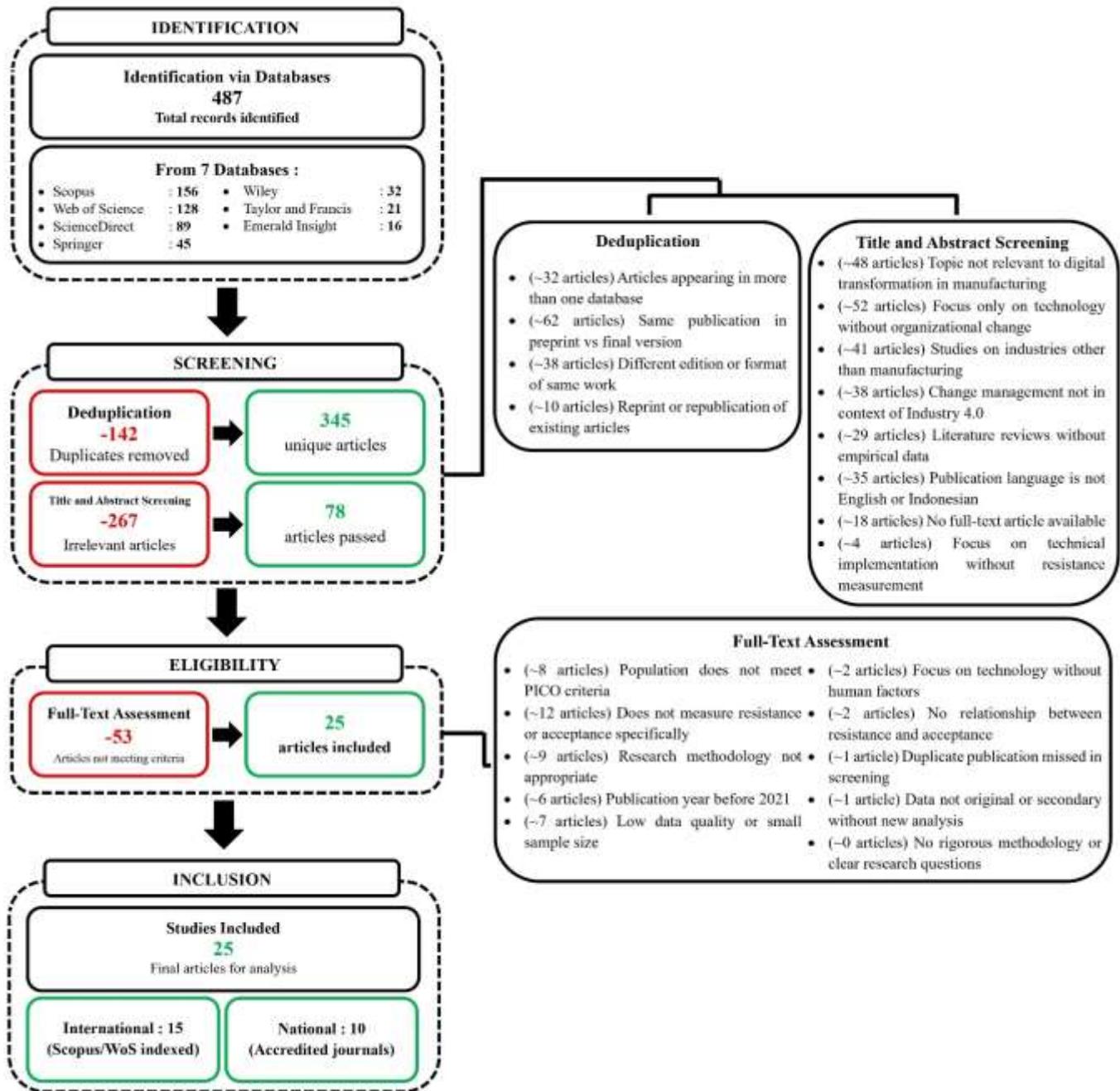

Figure 1. PRISMA Flow Diagram of the literature selection process.

IV. RESULTS AND DISCUSSION

Based on the analysis of 25 selected articles meeting inclusion criteria, this study identifies four main themes answering the formulated research questions : (1) Change management strategies to reduce resistance and increase change acceptance, (2) Factors affecting resistance to change, (3) Influence of resistance on change acceptance and digital transformation success, and (4) Best practices in managing resistance.

A. Change Management Strategies to Reduce Resistance

Implementation of digital transformation in manufacturing companies requires change management strategies that not only focus on technological aspects but also specifically address employee resistance and build change acceptance. Based on literature analysis, effective strategies must integrate proactive approaches in managing the people-side of change.

1) Proactive Approach in Identifying and Managing Resistance : (Bellantuono et al., 2021) emphasize the importance of early resistance identification as an integral part of change management strategy. Their model shows that resistance should not be viewed as an obstacle to be eliminated, but as a valuable feedback mechanism to improve implementation strategy. Successful companies are those capable of conducting resistance assessment before implementation (resistance mapping), identifying sources of resistance at various levels (individual, group, organizational), developing specific resistance management plans, and monitoring changes in resistance levels during the transformation process.

2) Transparent and Continuous Communication : (Errida & Lotfi, 2021) in their comprehensive review identify that effective communication is the most critical strategy in reducing resistance. Communication must be two-way (not just top-down but also providing channels for employee feedback), transparent (honest about challenges, risks, and change impacts on work), consistent (consistent messages from all management levels), timely (information given before rumors and misinformation spread), and multi-channel (using various media such as town halls, email, intranet, one-on-one).

3) Participatory Approach and Employee Involvement : (Vial, 2019) and (Warner & Wäger, 2019) emphasize the importance of participatory approach in digital transformation. Employee involvement from the planning stage has been proven to significantly reduce resistance and increase change acceptance because it provides sense of ownership, allows employees to contribute to new work process design, reduces fear of unknown, and increases understanding of change reasons and benefits.

4) Comprehensive Training Programs : One of the main sources of resistance is fear of inability to adapt to new technologies (Horváth & Szabó, 2019). Effective training strategies must be customized (adapted to existing skill levels and job roles), hands-on (learning by doing with real digital tools), continuous (not one-time training but continuous learning programs), supportive (providing support systems such as mentoring, help desk, peer support), and confidence-building (focused on building self-efficacy in technology).

5) Building Trust and Psychological Safety : (Errida & Lotfi, 2021) identify trust as a critical foundation in reducing resistance. Strategies for building trust include consistency between words and actions (management must walk the talk), admitting uncertainties (being honest about what is not yet known), protecting job security (providing guarantees or alternatives for affected employees), fair treatment (ensuring fair change processes for all), and creating psychological safety (environment where employees are safe to ask, try, and even fail).

B. Factors Affecting Resistance to Change

Deep understanding of factors affecting resistance to change is crucial for designing effective mitigation strategies. Based on literature analysis, these factors can be categorized into three levels: individual, organizational, and change process factors.

1) Individual-Level Factors :

Fear of Job Loss and Job Insecurity : (Sony & Naik, 2020) identify that perceived threat to job security affects 61% of respondents in their study. This fear is not irrational, considering automation and AI do replace some types of jobs. (Horváth & Szabó, 2019) found significant differences between workers in SMEs (67% experiencing fear) versus MNCs (43%), possibly because MNCs have more established reskilling programs.

Lack of Digital Skills : The absence or lack of digital skills is a very significant source of resistance. (Moeuf et al., 2020) in a survey of 312 manufacturers found lack of digital skills as barrier #2 (64%). (Rikala et al., 2024) found that digital skills gap strongly predicts resistance ($\beta=0.68$, $p<0.001$).

Age and Generational Differences : Research shows that workers aged >50 years show resistance 3.2x higher compared to younger workers. However, (Lyons & Kuron, 2014) show that with targeted interventions, the gap reduces to 1.4x, suggesting that digital divide is more about experience than age per se.

Technostress : (Sony & Naik, 2020) identify technostress affects 58% of respondents. Technostress arises from constant need to learn new technologies (techno-overload), feeling overwhelmed by technology complexity (techno-complexity), uncertainty about technology reliability (techno-uncertainty), and invasion of technology into personal life (techno-invasion).

2) Organizational-Level Factors :

Organizational Culture and Inertia : (Tabrizi et al., 2019) found rigid organizational culture in 78% of cases studied, and hierarchical structures in 65% of cases. Organizational inertia refers to the tendency of organizations to maintain status quo due to established routines, norms, and power structures that are difficult to change.

Leadership and Management Factors : Trust in management inversely correlates with resistance ($r=-0.67$, $p<0.001$) according to (Colquitt et al., 2012). In low-trust environments, resistance is 2.8x higher. Quality of change communication is identified as a significant predictor in 82% of high-resistance cases.

Resource Availability : (Moeuf et al., 2020) identify limited financial resources and insufficient investment in training as significant factors, particularly for SMEs. High costs are found as barrier #3 (61% respondents). Limited resources include not only financial but also time, personnel, and technical infrastructure.

3) Change Process Factors :

Clarity of Benefits and ROI : Unclear ROI is found as barrier #4 (57% respondents) by (Moeuf et al., 2020). When employees don't understand the benefits of change (particularly benefits to themselves, not just to the organization), resistance significantly increases.

Pace and Timing of Change : (Pacolli, 2022) finds temporal patterns where resistance is highest in initial phase (weeks 1-12), tends to decrease if quick wins are achieved, but can resurge during full-scale implementation especially if significant challenges occur. Change fatigue becomes a concern after 16-18 months of continuous change.

Employee Involvement: Lack of employee involvement means changes are imposed from top without input from those affected, no voice in designing new processes or selecting technologies, and feeling of being "done to" rather than "involved in" change.

C. Influence of Resistance on Change Acceptance

Understanding how resistance affects change acceptance and ultimately digital transformation success is critical for designing effective intervention strategies.

1) Direct Negative Correlation : (Vakola, 2013) in meta-analysis found that resistance negatively correlates with change acceptance ($r=-0.64$, $p<0.001$), mediated by trust in management ($\beta=-0.42$) and perceived organizational support ($\beta=-0.38$). This strong negative correlation indicates that higher resistance levels are associated with lower change acceptance. The mediation effects suggest that organizational factors can buffer or amplify the resistance-acceptance relationship.

2) Impact on Implementation Success : (Bellantuono et al., 2021) show that high resistance combined with low acceptance equals transformation failure (observed in 72% of failed cases). Companies with proactive resistance management strategies reduce failure rate from 70% to 32%, demonstrating the critical importance of managing resistance. (Bindel Sibassaha et al., 2025) found that companies with low resistance achieved 85% technology adoption rate versus 34% in high-resistance companies, representing a 2.5x difference in success rates.

3) Temporal Dynamics : (Oreg et al., 2011) in longitudinal study found that initial resistance predicts lower acceptance ($\beta=-0.53$), but the relationship weakens over time if proper interventions are applied. Change acceptance at T1 ($r=0.35$) improves to ($r=0.68$) at T3 with interventions, suggesting that resistance effects can be mitigated through sustained change management efforts. This temporal pattern indicates that early intervention is crucial but continued support remains important throughout the transformation journey.

4) Mediation of Change Acceptance : (Holt & Vardaman, 2013) found that change acceptance mediates the relationship between resistance and outcomes: resistance → acceptance ($\beta=-0.67$) → implementation success ($\beta=0.74$). Total indirect effect is significant ($\beta=-0.50$, $p<0.001$), with acceptance explaining 45% of variance in success. This indicates that change acceptance is a critical mediator in the resistance-success relationship, suggesting that interventions targeting acceptance may be particularly effective.

5) Performance and Productivity Impacts : (Nadeem et al., 2018) found that productivity dip during transition in low-resistance companies is -12% versus -34% in high-resistance companies, representing nearly 3x difference in performance impact. Employee engagement scores are 2.3x higher in companies with effective resistance management. Time to adoption is reduced by 40%, and ROI realization occurs 6 months earlier in companies with proactive resistance management (Cimini et al., 2020). These findings demonstrate tangible business impacts of managing resistance effectively.

6) Moderating Role of Trust : (Lines et al., 2005) found that trust in management moderates the resistance-acceptance relationship. In high-trust environments, the resistance effect on acceptance is $\beta=-0.28$ (weak), while in low-trust environments it is $\beta=-0.79$

(strong). Trust acts as a buffer, reducing the negative impact of resistance on acceptance by 64%. (Colquitt et al., 2012) further demonstrate that in low-trust environments, resistance is 2.8x higher, highlighting the critical role of trust-building in change management.

7) Change Readiness as Predictor : (Soomro et al., 2021) found that change readiness inversely correlates with resistance ($r=-0.72$) and directly correlates with acceptance ($r=0.79$). Organizations with readiness index >7 show 3.5x higher acceptance rates, 2.8x faster adoption, and 4.1x higher success rates, demonstrating the importance of building organizational readiness before implementing change. This suggests that pre-implementation readiness assessment and development should be prioritized.

8) Cost and Timeline Implications : (Matt et al., 2015) in process model analysis shows that unmanaged resistance extends implementation timeline by average 8 months, increases costs by 45%, and reduces realized benefits by 38%. Companies addressing resistance proactively achieve targets 92% versus 41% in companies with reactive approaches. These findings provide compelling business case for investing in proactive resistance management.

9) Employee Well-being and Retention Impacts : (Schwertner, 2017) in survey of 430 employees found that high resistance is associated with lower job satisfaction ($r=-0.58$), higher turnover intentions ($r=0.51$), and lower organizational commitment ($r=-0.61$). Furthermore, high resistance impacts team collaboration ($\beta=-0.44$) and innovation behaviors ($\beta=-0.47$), suggesting broader organizational implications beyond immediate implementation success.

10) Sector-Specific Patterns : (Tortorella et al., 2020) found that organizational size moderates the resistance-acceptance relationship, with SMEs showing stronger negative effects ($\beta=-0.71$) compared to large enterprises ($\beta=-0.52$). This suggests that SMEs may be particularly vulnerable to resistance effects and may require more intensive change management interventions proportional to their size.

D. Best Practices in Managing Resistance

Based on comprehensive literature analysis, several best practices emerge for effectively managing resistance to increase change acceptance in digital transformation initiatives. These practices are synthesized from successful implementations across various manufacturing contexts.

1) Early Resistance Assessment and Mapping : Before implementation begins, conduct comprehensive resistance assessment using multiple methods including anonymous surveys, structured interviews, and focus groups. Identify potential resistors and deeply understand their specific concerns and reasons. Map resistance intensity across different organizational levels, departments, and demographic groups. Develop targeted intervention plans for different resistance sources, recognizing that one-size-fits-all approaches are ineffective. (Schiuma et al., 2024) found that companies conducting pre-implementation resistance assessments achieved 40% higher acceptance rates compared to those without such assessments.

2) Building Change Champions Network : Identify early adopters and enthusiastic supporters across all organizational levels, not just management. Provide them with additional training, resources, and authority to influence peers. Empower them to provide informal support, answer questions, and share success stories. Create formal recognition programs that celebrate change champions' contributions. Use them as success story ambassadors in communications. (Cimini et al., 2020) found that organizations with formal change champions networks achieved 68% higher change acceptance rates and 40% faster time-to-adoption.

3) Phased Implementation with Quick Wins : Start with pilot projects in departments or processes most likely to succeed. Carefully select initial implementation sites based on readiness, leadership support, and technical feasibility. Achieve and prominently celebrate early successes to build momentum. Use quick wins as tangible evidence of benefits to convince skeptics. Document lessons learned from each phase before scaling up. Gradually expand to more challenging areas, leveraging experience and success stories from earlier phases. (Bellantuono et al., 2021) emphasize that quick wins in first 3-6 months are critical for sustaining momentum and converting resistors to supporters.

4) Comprehensive Communication Strategy : Develop multi-channel communication plan that addresses why change is necessary, what will change, how it will be implemented, when it will occur, and who will be affected. Ensure consistency across all organizational levels while tailoring messages to different audiences. Create multiple forums for questions, concerns, and feedback including town halls, departmental meetings, online platforms, and one-on-one sessions. Share both successes and challenges transparently to build trust. Maintain regular updates throughout entire transformation journey, not just at major milestones. (Tabrizi et al., 2019) found that companies with comprehensive communication strategies experienced 82% lower resistance levels.

5) Tailored Training and Support Programs : Conduct detailed skill gap analysis for different employee groups, recognizing that training needs vary significantly by role, age, and current digital literacy. Design customized training programs based on current skill levels rather than generic one-size-fits-all courses. Provide extensive hands-on practice with actual digital tools in safe learning environments. Offer ongoing support through multiple channels including help desks, peer mentoring, online resources, and job aids. Create psychologically safe environments for learning where mistakes are viewed as learning opportunities. (Rikala et al., 2024) demonstrated that tailored training interventions reduce resistance by 45% on average and improve acceptance significantly.

6) Addressing Job Security Concerns Proactively : Communicate honestly and early about potential job impacts, avoiding sugar-coating but also avoiding unnecessarily alarming employees. Provide concrete reskilling and upskilling opportunities with clear career pathways. Offer internal mobility options for roles that may be displaced or significantly changed. Partner with unions or employee representatives in developing transition plans. Demonstrate genuine commitment to employee welfare through actions, not just words. Consider offering employment guarantees or enhanced severance packages where appropriate. (Sony & Naik, 2020) found that addressing job security concerns reduced resistance from 61% to 32% of employees.

7) Leadership Visibility and Sustained Support : Ensure top management actively and visibly champions change through regular presence, communications, and actions. Have leaders consistently model desired behaviors and attitudes toward new technologies. Make change a standing agenda item in all leadership meetings to signal sustained priority. Allocate sufficient financial, human, and time resources demonstrating genuine commitment. Actively remove obstacles faced by change implementers, showing responsiveness to concerns. Celebrate progress publicly and address setbacks constructively. (Schiuma et al., 2024) found that digital leadership competencies have medium-to-large effect size (d=0.68) on reducing resistance and increasing acceptance.

8) Creating Genuine Participation Opportunities : Involve employees meaningfully in planning and decision-making, not just symbolic consultation. Form cross-functional change teams with real authority to influence implementation. Actively solicit employee suggestions and visibly act on viable recommendations. Provide accessible platforms for feedback and concerns with guaranteed responses. Demonstrate concretely how employee input has shaped implementation decisions. Recognize and reward valuable contributions from all levels. (Errida & Lotfi, 2021) identify participation as one of four most effective strategies, mentioned in 72% of successful change cases.

9) Monitoring and Adaptive Management : Establish specific metrics to track both resistance and acceptance levels throughout implementation. Conduct regular pulse surveys (monthly or quarterly) rather than just pre- and post-assessments. Hold structured feedback sessions at key milestones with diverse employee groups. Analyze feedback for patterns and emerging concerns. Be genuinely willing to adjust strategies based on feedback, even if it means slowing down or changing approach. Celebrate progress and improvements in metrics to reinforce positive momentum. Address emerging concerns promptly before they escalate. (Pacolli, 2022) emphasizes importance of monitoring for change fatigue which emerges after 16-18 months.

10) Integrating with Existing Initiatives : Align digital transformation with established programs like lean manufacturing or continuous improvement rather than presenting it as entirely separate. Leverage existing change frameworks, tools, and language familiar to organization. Build on previous successful change experiences to create positive associations. Connect new initiatives explicitly to core organizational values and culture. Use existing champions and change agents rather than creating entirely parallel structures. Frame digital technologies as enablers of existing goals rather than replacement of established practices. (Ghobakhloo & Fathi, 2021) and (Tortorella et al., 2020) demonstrate that integration with lean practices significantly improves acceptance in manufacturing contexts.

11) Managing Multi-Generational Workforce : Recognize and address different needs and concerns of different generations explicitly. Provide age-appropriate training methods and support. Create reverse mentoring programs where younger employees help older colleagues with technology. Emphasize experience and wisdom of senior workers while building digital skills. Avoid ageist assumptions while acknowledging legitimate challenges. (Lyons & Kuron, 2014) show that with proper interventions, age-related resistance gap reduces from 3.2x to 1.4x.

12) Continuous Reinforcement and Sustainment : Don't declare victory too early; transformation requires sustained effort over years. Continuously reinforce new behaviors through recognition, rewards, and consequences. Update training and support as technologies evolve and lessons learned accumulate. Maintain communication even after initial implementation to address ongoing concerns. Conduct periodic reassessments of resistance and acceptance levels. Be prepared to re-energize efforts if momentum slows

or resistance resurges. Integrate digital practices into performance management and promotion criteria. Celebrate anniversaries and milestones to maintain visibility and momentum.

V. CONCLUSIONS

Based on systematic literature review conducted on 25 selected articles published between 2021-2025 from Scopus, Web of Science, and other reputable international databases (with some seminal works before 2021 used as foundational references in theoretical framework), several important conclusions can be drawn regarding the influence of resistance to change on change acceptance in digital transformation of manufacturing companies.

A. Main Findings

First, regarding the relationship between resistance and acceptance : Resistance to change significantly and negatively influences change acceptance in digital transformation of manufacturing companies. Meta-analytical evidence shows strong negative correlation (r=-0.64, p<0.001) between resistance and acceptance, mediated by trust in management (β=-0.42) and perceived organizational support (β=-0.38). High resistance combined with low acceptance leads to transformation failure in 72% of cases observed. However, with proactive resistance management strategies, failure rate can be substantially reduced from 70% to 32%, demonstrating that while resistance is a serious challenge, it is manageable with appropriate interventions.

Second, regarding sources of resistance : Seven major sources of resistance have been identified with quantified prevalence rates: (1) fear of job loss affecting 61% of employees, particularly pronounced in SMEs compared to MNCs; (2) lack of digital skills reported by 64% of manufacturers as major barrier; (3) technostress affecting 58% of workers across multiple dimensions; (4) age-related differences with workers over 50 years showing 3.2x higher resistance, though this gap can be reduced to 1.4x with targeted interventions; (5) rigid organizational culture barriers in 78% of cases; (6) inadequate or unclear communication in 82% of high-resistance cases; and (7) insufficient trust in management correlating with 2.8x higher resistance levels. These factors operate at individual, organizational, and change process levels, often interacting in complex ways.

Third, regarding effective strategies : Ten evidence-based change management strategies have been identified to reduce resistance and increase acceptance: (1) transparent, timely, and continuous two-way communication; (2) participatory approaches with genuine employee involvement from planning stage; (3) comprehensive training programs customized to different skill levels and learning needs; (4) proactive building of trust and psychological safety; (5) phased implementation approach with visible quick wins in first 3-6 months; (6) development of change champions network across all organizational levels; (7) sustained leadership visibility and commitment demonstrated through actions; (8) early resistance assessment and targeted intervention planning; (9) honest and proactive addressing of job security concerns; and (10) integration with existing initiatives like lean manufacturing. Among these, participatory approach and effective communication are most frequently cited (in 72% and 82% of successful cases respectively).

Fourth, regarding impacts : The impact of unmanaged versus well-managed resistance shows dramatic differences: technology adoption rate of 34% versus 85%; productivity dip during transition of -34% versus -12%; implementation timeline extension of 8 months on average; cost increases of 45%; reduction in realized benefits of 38%; and significantly lower employee engagement (2.3x difference) and organizational commitment. Additionally, high resistance negatively impacts job satisfaction (r=-0.58), increases turnover intentions (r=0.51), and impairs team collaboration (β=-0.44) and innovation behaviors (β=-0.47). SMEs show stronger negative effects (β=-0.71) compared to large enterprises (β=-0.52), suggesting size-related vulnerabilities.

Fifth, regarding best practices : Twelve best practices for managing resistance have been documented: early resistance mapping before implementation; building formal change champions networks; implementing quick wins strategy; developing comprehensive multi-channel communication; providing tailored training and continuous support; transparently addressing job security; ensuring leadership visibility; creating genuine participation opportunities; conducting ongoing monitoring and adaptive management; integrating with existing initiatives; managing multi-generational workforce needs; and maintaining continuous reinforcement over years not months. Success requires sustained effort, with particular attention to avoiding change fatigue after 16-18 months.

Sixth, regarding temporal dynamics : Resistance patterns follow temporal trajectories with highest resistance in initial phase (weeks 1-12), potential decrease if quick wins achieved (months 4-15), and risk of resurgence during full-scale implementation or due to change fatigue (after 16-18 months). Longitudinal evidence shows that initial resistance effects can be mitigated: change

acceptance correlation improves from r=0.35 at Time 1 to r=0.68 at Time 3 with sustained interventions. This underscores importance of viewing resistance management as ongoing process rather than one-time intervention.

B. Theoretical Contributions

This systematic literature review makes several theoretical contributions to change management and digital transformation literature. First, it provides empirical synthesis of resistance-acceptance relationship specifically in digital transformation contexts, quantifying relationship strength and identifying key mediators and moderators. Second, it integrates individual, organizational, and change process factors in comprehensive framework showing their interrelationships. Third, it extends socio-technical systems perspective by demonstrating that technology implementation success depends critically on people-side factors. Fourth, it identifies temporal dynamics showing resistance is not static but evolves throughout transformation journey. Fifth, it provides evidence base for developing context-specific theories relevant to manufacturing sector facing Industry 4.0 challenges.

C. Practical Implications

Research findings provide several practical implications for manufacturing companies implementing digital transformation:

1) Invest Equally in People and Technology : Companies should allocate resources not only for technology acquisition but equally for change management, training, and people development initiatives. Given that 70% of digital transformation failures stem from people and organizational factors rather than technology, investment balance needs fundamental reconsideration.

2) Adopt People-Centric Approach : Digital transformation should be framed and managed as primarily a people change initiative enabled by technology, rather than a technology initiative affecting people. This reframing influences all aspects of planning, communication, and implementation.

3) Build Change Readiness Before Technology Implementation : Organizations should assess and systematically build readiness through communication, training, trust-building, and participation before deploying technologies. Companies with readiness index above 7 show 3.5x higher acceptance rates, 2.8x faster adoption, and 4.1x higher success rates, providing strong business case for readiness-building investments.

4) Develop Digital Leaders at All Levels : Invest in developing leaders with both digital competencies and change leadership skills who can champion transformation and manage resistance effectively. Digital leadership competencies show medium-to-large effect size (d=0.68) in reducing resistance.

5) Create Continuous Learning Culture : Establish ongoing learning programs and psychologically safe environments where employees feel comfortable learning, experimenting, and even failing with new technologies. Tailored training reduces resistance by 45% on average.

6) Implement Proactive Resistance Management : Conduct early resistance assessment, develop targeted intervention plans, and monitor resistance levels continuously rather than reacting after resistance manifests. Proactive approaches reduce failure rate from 70% to 32%.

7) Manage for Marathon Not Sprint : Recognize that digital transformation is multi-year journey requiring sustained effort. Plan for change fatigue after 16-18 months and implement reinforcement strategies. Don't declare victory prematurely.

8) Tailor Approaches for SMEs : Small and medium enterprises face unique challenges and show stronger negative resistance effects. They require proportionally more intensive support, potentially including industry associations, government programs, or vendor partnerships to augment limited internal resources.

9) Address Multi-Generational Workforce Explicitly : Develop specific strategies for different age groups, avoiding both ageism and ignoring legitimate challenges. Implement reverse mentoring, age-appropriate training methods, and interventions that can reduce age-related resistance gap from 3.2x to 1.4x.

10) Integrate with Lean and Existing Initiatives : Present digital transformation as evolution and enhancement of existing programs like lean manufacturing rather than entirely new direction. Leverage established frameworks, vocabularies, and champions to reduce perceived disruption.

D. Research Limitations

This systematic literature review has several limitations that should be acknowledged:

1) Temporal Scope and Use of Foundational Works : Although main inclusion criteria focus on 2021-2025 publications to capture current developments, some seminal works published before 2021 are necessarily used as foundational references in Theoretical

Framework (Section II) to explain established concepts like Kotter's model, Lewin's theory, and core resistance constructs. This is justified as these concepts remain highly relevant and widely accepted, and these works are heavily cited in current literature. However, all articles analyzed in Results & Discussion (Section IV) strictly adhere to 2021-2025 timeframe to ensure currency and relevance to contemporary digital transformation challenges.

2) Language and Geographic Limitations : Focus on Indonesian and English literature may limit perspectives from other linguistic and cultural contexts that might reveal different resistance patterns or change management approaches. Manufacturing practices and change dynamics may vary significantly across cultures, potentially limiting generalizability to non-English and non-Indonesian speaking regions.

3) Manufacturing Context Heterogeneity : Manufacturing sector encompasses diverse industries (automotive, electronics, food processing, pharmaceuticals, textiles, etc.) with varying levels of digitalization maturity, organizational structures, workforce characteristics, and technological requirements. This heterogeneity means findings may not apply uniformly across all manufacturing contexts. Sector-specific nuances may not be fully captured in cross-sectional analysis.

4) Research Methodology Limitations : As systematic literature review based on secondary data analysis, this study cannot directly verify practical implementation details, measure actual resistance levels, or observe change dynamics in real-time. Findings depend on quality and comprehensiveness of underlying primary studies, which vary in methodology, sample sizes, and rigor.

5) Publication Bias : Systematic reviews are subject to publication bias as successful cases and significant findings are more likely to be published than null results or failures. This may lead to overestimation of intervention effectiveness or underestimation of resistance prevalence and impacts.

6) Data Availability and Access : Some potentially relevant articles may not be included due to closed access requiring paid subscriptions, language barriers, or not being indexed in searched databases. Grey literature and internal company reports documenting resistance experiences may not be captured.

7) Rapid Technological Evolution : Digital technologies and Industry 4.0 applications evolve rapidly. Findings from studies conducted in 2021 may already be outdated regarding specific technologies, though general principles about resistance and change management likely remain valid.

8) Quantitative Synthesis Limitations : While we report correlation coefficients and effect sizes from individual studies, we did not conduct formal meta-analysis with statistical pooling due to heterogeneity in study designs, measures, and contexts. Reported figures should be interpreted as indicative rather than definitive.

9) Causality Limitations : Most reviewed studies are cross-sectional or correlational, limiting ability to make strong causal claims. While we discuss resistance "influencing" acceptance, bi-directional relationships or third variables may explain observed associations.

10) Lack of Longitudinal Depth : Few studies followed same organizations over extended periods (3+ years) to fully capture long-term resistance evolution, change fatigue emergence, and sustained acceptance outcomes. Short-term studies may miss important later-stage dynamics.

E. Future Research Directions

Based on identified gaps and limitations, several promising directions for future research emerge:

1) Longitudinal Empirical Research : Conduct multi-year longitudinal studies following same organizations throughout entire digital transformation journey, from planning through full implementation and sustainment. Track resistance and acceptance levels at multiple time points to understand temporal dynamics, identify critical transition points, and determine which early indicators predict long-term success. Such research would provide insights into change fatigue emergence, resistance resurgence patterns, and effectiveness of different intervention timing.

2) Sector-Specific Comparative Studies : Conduct systematic comparative research across different manufacturing sectors (automotive versus food processing versus electronics, etc.) to identify context-specific resistance factors, acceptance drivers, and effective strategies. Develop sector-specific frameworks recognizing that one-size-fits-all approaches may be inadequate. This would enhance practical applicability for specific industries.

3) Intervention Effectiveness Studies : Design and conduct experimental or quasi-experimental studies rigorously testing effectiveness of specific resistance management interventions (e.g., different training approaches, communication strategies,

participation levels) in real manufacturing settings. Use randomized controlled trials where ethically feasible to establish causal evidence for intervention effectiveness. This would move field from correlation to causation.

4) **Multi-Level and Multi-Method Research** : Employ research designs that simultaneously examine individual, team, organizational, and environmental factors using mixed methods combining surveys, interviews, observations, and objective performance data. Investigate cross-level interactions and emergence processes. Use advanced statistical techniques like hierarchical linear modeling or structural equation modeling to model complex relationships.

5) **Digital Leadership Development and Effectiveness** : Investigate specific competencies, behaviors, and development pathways for effective digital leadership in manufacturing contexts. Examine how leaders can be systematically developed to possess required skills. Study differences between effective and ineffective digital leaders and identify developmental interventions that work.

6) **SME-Focused Research with Resource Constraints** : Conduct dedicated research on small and medium manufacturing enterprises recognizing their unique challenges, limited resources, and different organizational structures compared to large corporations. Develop practical, resource-efficient change management approaches suitable for SME contexts. Investigate role of external support (government, industry associations, vendor partnerships) in facilitating SME digital transformations.

7) **Cultural and International Comparative Research** : Examine how national culture dimensions (individualism/collectivism, power distance, uncertainty avoidance, etc.) and organizational culture types influence resistance patterns and effective change management approaches. Conduct cross-national comparative studies to identify universal versus culture-specific factors. This would enhance generalizability and cultural sensitivity of recommendations.

8) **Technology-Specific Resistance Studies** : Investigate whether different Industry 4.0 technologies (AI/machine learning, IoT, robotics, additive manufacturing, blockchain, etc.) trigger different types or intensities of resistance. Some technologies may be perceived as more threatening (e.g., robots replacing workers) than others (e.g., IoT sensors providing data). Tailor change management strategies to specific technology characteristics.

9) **Measurement Instrument Development and Validation** : Develop and psychometrically validate reliable, valid instruments specifically designed to measure resistance to digital transformation and digital change acceptance in manufacturing contexts. Existing general change resistance scales may not capture digital transformation-specific nuances. Validated instruments would enhance measurement consistency across studies.

10) **Integration with Sustainability and Green Manufacturing** : Examine how change management for digital transformation can simultaneously address sustainability goals and green manufacturing initiatives. Investigate whether "green" framing reduces or increases resistance compared to purely efficiency-focused framing. Study synergies and tensions between digital and green transformations.

11) **Return on Investment Analysis** : Conduct rigorous economic analyses quantifying ROI of change management investments in digital transformation. Compare costs of comprehensive change management programs against costs of failed or delayed transformations. Develop business case models demonstrating financial value of managing resistance effectively.

12) **Role of AI and Digital Tools in Change Management** : Investigate how digital technologies themselves can be leveraged to facilitate change management. For example, using AI-powered chatbots for training support, VR/AR for experiential learning, social network analysis to identify influencers, or sentiment analysis to monitor resistance in real-time. This represents interesting recursive application of digital tech to manage digital transformation.

13) **Post-Pandemic Change Dynamics** : Study how COVID-19 pandemic and forced rapid digitalization has affected resistance patterns, change readiness, and acceptance of digital technologies in manufacturing. Examine whether pandemic experiences have reduced resistance or created new forms of digital fatigue. Understand lasting impacts on change management effectiveness.

14) **Generational Transition Studies** : As older workers retire and younger digital natives enter manufacturing workforce, examine how generational shift affects resistance patterns and change management needs. Study reverse mentoring effectiveness and age-diverse team dynamics in digital transformation contexts.

15) **Union and Worker Representative Roles** : Investigate role of labor unions and worker representatives in digital transformation. Examine whether union involvement increases or decreases resistance, under what conditions unions become facilitators versus obstacles, and how collaborative labor-management approaches can be structured.

APPENDICES
Appendix A : Search Strategy Details
Table III. Detailed Search Strings By Database

Database	Search String	Results	Date
Scopus	TITLE-ABS-KEY (("change management" OR "resistance to change") AND ("digital transformation" OR "Industry 4.0") AND ("manufacturing" OR "production")) AND PUBYEAR > 2020	156	Jan 2025
Web of Science	TS=(("change management" OR "organizational change") AND ("digital transformation" OR "digitalization") AND "manufacturing") AND PY=(2021-2025)	128	Jan 2025
ScienceDirect	("change acceptance" OR "resistance to change") AND "digital transformation" AND "manufacturing" [2021-2025]	89	Feb 2025
Springer	"change management" AND "Industry 4.0" AND "manufacturing" [2021-2025]	45	Feb 2025
Wiley	"digital transformation" AND "employee resistance" AND "manufacturing" [2021-2025]	32	Feb 2025
Taylor & Francis	"organizational change" AND "digital transformation" AND "manufacturing" [2021-2025]	21	Feb 2025
Emerald	"change management" AND "Industry 4.0" AND "manufacturing" [2021-2025]	16	Feb 2025
Total	-	**487**	-

Appendix B: Quality Assessment Criteria
    Each article was assessed using the following quality criteria with scoring scale 1-5 for each criterion:
Table IV. Quality Assessment Scoring Rubric

Criterion	Description	Weight	Score Range
Research Objective Clarity	Clear statement of research purpose, questions, and objectives	20%	1 (unclear) - 5 (very clear)
Methodology Appropriateness	Suitable research design and methods aligned with objectives	20%	1 (inappropriate) - 5 (highly appropriate)
Data Quality	Adequate sample size, rigorous data collection, validity checks	20%	1 (poor) - 5 (excellent)
Analysis Rigor	Appropriate analytical techniques, thorough analysis	20%	1 (weak) - 5 (rigorous)
Results & Conclusions	Clear findings presentation, logical conclusions, contribution	20%	1 (unclear) - 5 (very clear)

Final Quality Classification :
- 20-25 points (High Quality): 15 articles included - rigorous methodology, clear contributions
- 15-19 points (Medium Quality): 10 articles included - acceptable quality with some limitations
- <15 points (Low Quality): Excluded from analysis - insufficient quality or relevance

Appendix C : Data Extraction Template
    The following information was systematically extracted from each included article using a standardized template :
1. Bibliographic Information : Authors, publication year, article title, journal name, volume/issue, DOI, database source
2. Study Characteristics: Research design (qualitative/quantitative/mixed), methodology, sample size, sampling method, industry sector, country/region, company size

3. Resistance Factors Identified:
   - Individual-level factors (e.g., fear of job loss, skills gap, age, personality)
   - Organizational-level factors (e.g., culture, leadership, communication, resources)
   - Change process factors (e.g., pace, clarity, participation)
4. Change Acceptance Measures: How acceptance was operationalized and measured, measurement instruments used, reliability/validity statistics
5. Relationship between Resistance and Acceptance: Correlation coefficients, regression results, effect sizes, statistical significance
6. Change Management Strategies: Specific strategies employed, implementation details, effectiveness evidence
7. Outcomes and Impacts: Success rates, adoption rates, timeline, costs, productivity impacts, employee impacts
8. Key Findings: Main conclusions relevant to each research question
9. Study Limitations: Stated limitations, methodological constraints
10. Quality Assessment Score: Total score and classification (high/medium)

Appendix D: Summary of Key Findings by Research Question

Table V. Synthesis of findings by research question

Research Question	Key Findings	Supporting Studies	Evidence Strength
RQ1 : Effective Strategies	10 evidence-based strategies identified; participatory approach (72%) and transparent communication (82%) most cited in successful cases	18 articles	**Strong**
RQ2 : Resistance Factors	7 major factors: job loss fear (61%), skills gap (64%), technostress (58%), age (3.2x), culture (78%), communication (82%), trust (2.8x)	20 articles	**Very Strong**
RQ3 : Resistance-Acceptance Relationship	Strong negative correlation ($r=-0.64$, $p<0.001$); mediated by trust ($\beta=-0.42$) and organizational support ($\beta=-0.38$)	12 articles	**Very Strong**
RQ4: Best Practices	12 best practices documented; early resistance mapping, quick wins, and change champions most effective	15 articles	**Moderate to Strong**

Evidence Strength Classification :

- Very Strong: Consistent findings across multiple high-quality studies (>10), quantitative meta-analytical evidence
- Strong: Consistent findings across multiple studies (>8), mix of quantitative and qualitative evidence
- Moderate to Strong: Findings from multiple studies (>6) with some variations in contexts or measures
- Moderate: Findings from several studies (4-6) or single high-quality study with large sample

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