Global Scientific and Academic Research Journal of Economics, Business and Management
ISSN: 2583-5645 (Online)
Frequency: Monthly
Published By GSAR Publishers
Journal Homepage Link- https://gsarpublishers.com/journals-gsarjebm-home/

Comparative Study of Digital Transformation in Small and Medium Enterprises: Traditional PDCA Model vs. Modern Octopus Organization Model Change Management Approaches

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Article History

Received: 11/03/2026
Accepted: 17/03/2026
Published: 20/03/2026

Vol –5 Issue – 3

PP: -66-75

Abstract

This study analyzes a well-established managerial framework for implementing Industry 4.0 in small-to-medium-sized enterprises (SMEs), focusing on the utilization of the conventional PDCA (Plan-Do-Check-Act) cycle concerning one of the sixteen critical success factors (CSFs). It aims to identify the most effective change management model for SMEs, providing a comparative evaluation of generative AI applications in relation to proprietary data within innovative change management methodologies, including the Octopus Organization Model, to enhance organizational transformation and elevate employee satisfaction in operational processes. The problem statement highlights a crucial success aspect with the integration of AI to enhance knowledge and skills in driving digital transformation. This encompasses meeting organizational standards for employee training and development, securing support from senior management, ensuring access to technical expertise and resources, prioritizing user-friendliness, aligning initiatives with organizational objectives, and assessing the impact of trading partners. This study employed a quantitative methodology and utilized a survey approach to examine the impact of change management practices in SMEs on employee satisfaction through a comparative analysis of the traditional PDCA (Plan-Do-Check-Act) method and the contemporary Octopus Organization Model. The study filled a void by contrasting the implementation of the Octopus Organization Model with PDCA approaches in change management for SMEs.

Keywords: *Change Management, Organizational Development, Digital Transformation Process*

Introduction

A recent marketing research study conducted in 2025 by the U.S. Chamber of Commerce revealed that 58% of over 3,800 polled small businesses have strategically assessed and incorporated generative artificial intelligence (gen AI) into their operations. These organizations are employing GenAI in diverse domains, including accounting methods, point-of-sale systems, and bookkeeping, to evaluate profitability (Bindley, 2025). Furthermore, certain entities have implemented generative AI to oversee employee shift scheduling. Additional applications encompass the integration of generative AI into design layouts, communication systems for composing emails, developing marketing materials, publishing blogs and social media campaigns, and calculating project material prices and blueprints (Kochkodin, 2025).

A subsequent annual business survey conducted in Summer 2025 by Wharton and the marketing consulting firm GBK Collective, which gathered responses from over 800 businesses employing more than 1,000 individuals, indicated that 72% of senior and middle managers have employed generative AI to evaluate their organizations' return on investment (ROI). This evaluation was conducted to ascertain whether operational methods had favorable or unfavorable results, focusing specifically on entry-level recruiting expectations in comparison to those of senior and middle management. The survey also examined how managers utilize generative AI to obtain proprietary data for informed decision-making in the formulation and implementation of change management strategies to maintain competitive advantage (Smith, 2025).

With the ongoing advancement of generative AI and its growing integration into small and medium-sized enterprises (SMEs) for proprietary data analytics to support informed decision-making, establishing a robust, general-purpose gen-AI platform is increasingly critical. This platform should enable SMEs to implement effective change management strategies that drive digital transformation via generative AI, while prioritizing the maintenance or enhancement of employee satisfaction (Barney & Revees, 2024).

This research examines a recognized managerial framework for the adoption of Industry 4.0 in SMEs, specifically

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emphasizing the application of the PDCA (Plan-Do-Check-Act) cycle in relation to one of the sixteen critical success factors (CSFs) to identify the most effective change management model for SMEs (Kurniawanti et al., 2025). The study offers a comparative assessment of generative AI applications in relation to proprietary data within novel change management frameworks, such as the Octopus Organization Model, with the objective of facilitating organizational change and improving employee satisfaction in operational processes (Werner & Le-Brun, 2025). The problem statement emphasizes a critical success factor pertaining to the incorporation of AI to augment knowledge and abilities in facilitating digital transformation. This includes fulfilling organizational standards for employee training and development, obtaining support from senior management, ensuring access to technical expertise and resources, prioritizing user-friendliness, aligning initiatives with organizational goals, and assessing the influence of trading partners (Solaimani & Swaak, 2023).

This study seeks to identify deficiencies in current change management models in the literature, specifically for modern organizational methods that involve generative AI and proprietary data. The emphasis is on assessing critical success factors (CSFs) within the framework of the Octopus Organization Model in contrast to the conventional PDCA (Plan-Do-Check-Act) methodology. This research highlights the significance of adaptability, inquiry, and strategic involvement among employees, based on recognized best practices in change management, to improve operational systems and workplace environments. Insights from practitioners, academic research, and peer-reviewed literature substantiate the analysis.

Literature Review

Kurniawanti et al. (2025) identified sixteen essential success variables connecting managerial responsibilities to digital transformation in small and medium-sized firms (SMEs), employing the PDCA (Plan, Do, Check, Act) approach tailored for Industry 4.0. Their research fills a significant void in the current literature on managerial involvement, offering practical frameworks for managers leading digital initiatives through robust leadership, effective communication, and adaptability. In support of these conclusions, Solaimani and Swaak (2023) performed a comprehensive literature analysis on artificial intelligence (AI) and associated technologies, utilizing Necessary Condition Analysis (NCA) to assess the significance of key success variables across the stages of AI adoption. They concluded that performance expectancy, executive support, technical proficiency, resources, perceived usability, organizational alignment, and trading partner influence are all critical. Nonetheless, their relative importance fluctuates during different stages of adoption.

Additionally, Nedra et al. (2019) demonstrated that Lean Six Sigma (LSS) methodologies can greatly enhance processes within SME clothing enterprises. LSS combines two primary frameworks, PDCA and DMAIC (Define, Measure, Analyze, Improve, Control), and applies the PDCA cycle to optimize each stage of DMAIC continuously. Chatzoglou et al. (2025) similarly affirmed the positive impact of Health and Safety Management Systems (HSMS) on workplace safety, employee satisfaction, and overall performance. Their model incorporates six fundamental dimensions: safety culture, procedural adherence, training, equipment resources, motivation for safe practices, and management commitment. Utilizing data from 230 employees across ten Greek manufacturing firms, they introduced an improved HSMS framework based on the PDCA cycle, designed to raise standards such as OHSAS 18001 and ISO 45001.

Weiyu et al. (2025) provided valuable insights by examining the influence of Artificial Intelligence Implementation (AII) on Employee Engagement (EE) and Performance (EP), with Organizational Agility (OA) serving as a moderating variable in China's manufacturing IT sector. Their findings indicate that agile organizations can more effectively capitalize on AI-driven initiatives, offering meaningful perspectives for HR professionals and industry leaders. Further studies investigating the impact of AI on decision-making across multiple management levels, including policy, strategy, tactics, and operations, highlight both opportunities and ethical challenges. While AI enhances data management and reduces bias, it complicates ethical decision-making, which continues to rely on human judgment. Optimal integration should leverage AI for data acquisition and analysis, rather than fully autonomous decisions, thereby enabling SME leaders to balance innovation with ethical and regulatory requirements (Štrukelj & Dankova, 2025).

Sacavém et al. (2025) underscored the significance of leadership in facilitating technology adoption and innovation during digital transformation. A comprehensive literature review demonstrates that effective leadership supports technology integration, fosters organizational learning and collaboration, and enhances adaptability amid market uncertainties. Leaders also play a crucial role in reinforcing remote team cohesion and maintaining motivation throughout periods of change. In alignment with these findings, a recent study on cloud Enterprise Resource Planning (ERP) systems, utilizing the balanced scorecard approach and structural equation modeling with data from 155 organizations, showed considerable improvements in operational efficiency and leadership decision-making roles regarding the usage quality of ERP adoption (Kang et al., 2025).

Zangana et al. (2025) examined essential change management principles within agile frameworks, providing best practices and case studies showcasing effective implementation. Results indicate that proactive and adaptive change management strategies mitigate risk, expedite project timelines, and elevate stakeholder satisfaction. Integrating change management with agile methodologies substantially increases IT project resilience and performance. Additionally, Hizam et al. (2025) explored talent-centric approaches, including knowledge sharing, mobility, and training, on employee engagement in digital workplaces, analyzing mediators such as psychological empowerment and job satisfaction, along with trust as a moderating factor. Their

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research highlights significant direct and indirect effects of these strategies, delivering timely insights for HR professionals and scholars.

Ghobakhloo and Iranmanesh (2021) identified the multifaceted challenges SMEs face during digital transformation under Industry 4.0, emphasizing the necessity for strategic guidance in navigating this complexity. They highlighted eleven crucial factors for successful digitalization, noting that external support is foundational while operational technology readiness represents a major challenge. Er et al. (2024) also investigated Business Process Management (BPM) strategies, observing that startups exhibit varying process management priorities at different developmental stages. Digital startups differentiate themselves through customer-centric agility and ongoing product refinement, driven by process identification, IT-based implementations, and adaptive experimentation enabled by agile talent and flexible organizational cultures.

The Dutta et al. (2021) study took a different evaluation approach and examined how the digitalization strategies of SMEs are adapting to Industry 4.0, stressing the imperative to modernize quality processes and implement digital solutions aligned with the PDCA cycle. Five domains were identified as vital for global competitiveness: design for quality, regulatory compliance, goods control, statistical process monitoring, and complaint resolution. In cybersecurity, Balasubramanian et al. (2025) reviewed generative AI applications that provided substantive information on identifying key concerns related to privacy, security, and interpretability and offered strategic recommendations for organizational operations in light of evolving regulations such as the AI Act.

Molete et al. (2025) reaffirmed the value of strategic IT planning for SME performance, demonstrating that aligned IT initiatives reduce costs, enhance efficiency, and stimulate innovation. Their review shows marked improvements in sustainability and competitive advantage resulting from targeted IT investments, particularly in cloud and hybrid solutions. Kraft et al. (2022) presented evidence of diverse digital tool implementation patterns among SME managers, distinguishing between workflow/team management and operational practice changes, with implications for staff digital skill development.

Hu et al. (2024) observed that change management paradigm shifts are reshaping business models, presenting both obstacles and prospects for SMEs undergoing digital transformation. Their research outlines current trends and stresses the need for collaborative research networks to promote innovation and knowledge exchange. Ahmed et al. (2024) connected organizational culture and resource availability to change management competency, which affects employee attitudes towards digital transformation readiness in Malaysia's manufacturing sector. Buga (2024) discussed how modern organizational development structures regarding HR retention systems, focused on employee well-being and inclusivity, improve long-term organizational health and retention compared to traditional, performance-oriented HR approaches.

Finally, Kallmuenzer et al. (2025) investigated the impact of digital transformation on businesses, with a particular focus on small and medium-sized enterprises (SMEs). Their research indicates that some companies are adept at adapting to new technologies, but many small and medium-sized businesses are unsure about digitalization and don't want to do it. Drawing from comprehensive interviews, the research highlights crucial enablers, such as appropriate technological tools and skilled staff, that support SMEs in their digital journey, alongside hurdles like obsolete systems and a culture that resists risk-taking. The authors stress that a strategic approach to these challenges and resources is essential for SMEs to achieve successful digital transformation and improve business outcomes.

Collectively, most reviewed studies emphasize change management strategies pertinent to SME digitalization, with particular attention to the PDCA quality framework. This work advances current discourse by comparing leading change management models tailored to contemporary strategies incorporating generative AI and proprietary data. Furthermore, it evaluates key success factors via frameworks such as the Octopus Organization Model against conventional PDCA methods, thereby promoting organizational change and boosting employee satisfaction in operational processes suited to the unique characteristics of SMEs.

Problem Statement

The problem statement examines whether a critical success factor includes the integration of AI to improve knowledge and skills for digital transformation. It covers important areas such as meeting organizational expectations for employee training, gaining top management support, ensuring access to technical expertise and resources, prioritizing user-friendly solutions, aligning plans with company goals, and considering the effects on trading partners (Solaimani & Swaak, 2023). The research design analyzes this issue by comparing key success factors with models like the Octopus Organization Model and traditional PDCA methods. This approach aims to advance change management to best practices that encourage organizational growth and increase employee satisfaction, especially in operational processes tailored to the distinct needs of SMEs.

Research Design

Ahmed (2024) found cluster sampling preferable for simplifying data collection by dividing populations into clusters, such as locations or institutions, and randomly selecting from them. This method was employed to validate variables among SMEs by using quantitative methods and establishing a confidence interval for the mean, assuming a known population standard deviation. Cluster sampling is useful for large studies where listing the entire population is impractical, but it can be subjective if chosen clusters do not represent the whole population.

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In this study, quantitative methods were employed through two market research techniques: primary and secondary data collection and analysis. Initially, secondary data was gathered from previous business survey information, specifically from a McKinsey Global Survey focused on digital strategy and investment infrastructure over the past two years, examining the effects of startup costs and return on investment predictability on growth. The McKinsey Global Survey included responses from 1,331 C-level executives, senior managers, and heads of business units, departments, or divisions spanning various regions, industries, company sizes, and functional areas. Findings showed that top-performing organizations realized a median of 50 percent of the total potential revenue benefits from recent transformations, compared to a median of 31 percent among all respondents, and achieved 40 percent of possible cost benefits, versus 25 percent across all participants (Kate Smaje et al., 2022, June 15).

This study utilized a quantitative methodology with primary data, analyzing both dependent and independent variables via SurveyMonkey's statistical tools. Data was gathered from 100 respondents, in which the surveyed results reached a saturation of 93 participants over the designated amount of 100, meaning the newly collected primary data have met the saturation process based on Ruel et al.'s (2016) study requirements. The scope of this primary data collection surpassed earlier research that relied on secondary sources. For instance, Hu et al. (2024) used secondary data to provide broad insights relevant not only locally but also internationally, contributing to global academic discussions about digital transformation in small and medium-sized enterprises (SMEs). Researchers conducted an extensive literature search in the "Web of Science Core Collection" database, using keywords like "digital transformation" and "small and medium enterprises." Their review, which covered the years 2015 to 2023 (TS = [Digital transformation AND SME]), resulted in 81 pertinent publications.

Additionally, this research employed closed-ended questions to investigate whether change management practices within SMEs influence employee satisfaction through a comparative analysis of the traditional PDCA (Plan-Do-Check-Act) method and the newer Octopus Organization Model. A Likert scale was utilized instead of a binary "yes" or "no" format, as it is recognized as an appropriate tool for distributing questionnaires involving topics of interest in nonparametric studies (Mircioiu & Atkinson, 2017). The configuration of the close-ended questions in the questionnaire is detailed below.

Which of the following best describes how your SME uses proprietary data analytics for decision-making within the PDCA (Plan-Do-Check-Act) cycle?

To what extent are general-purpose generative AI platforms currently integral to your SME's change management practices when applying the Octopus Organization Model?

To what extent do you believe implementing the Octopus Organization Model could help your SME measure performance based on employee satisfaction?

To what extent does your SME use the PDCA (Plan-Do-Check-Act) cycle in its change management practices?

How extensively do your SME's change management practices include evaluations of generative AI applications within the Octopus Organization Model?

How familiar is your SME's change management model with the Octopus Organization Model and its goals of driving organizational change and improving employee satisfaction?

Furthermore, this study examined both the traditional PDCA (Plan-Do-Check-Act) methodology and the more recent Octopus Organization Model by conducting hypothesis testing on a selected sample population.

Hypothesis Testing

The hypothesis testing provided a framework for quantitative study design. It guided the primary data collection to assess the likelihood that the static test value equaled or exceeded the observed sample data. Additionally, it explained whether the null hypothesis aligned with the p-value or determined if the alternative hypothesis indicated at least one mean difference from others, based on the significance level using SPSS statistical analysis (Malhotra, 2019). The study employed statistical measures with a focus on hypothesis testing, specifically, an analysis of the paired samples and paired sample t-test to evaluate differences among various means. For instance, the Wilcoxon matched pairs signed-rank test methodology was used to test the null hypothesis within the change management model, which examined the traditional PDCA (Plan-Do-Check-Act) to the acceptance of the recent Octopus Organization Model within the SMEs sampled population.

The two-sample test for proportions with hypothesis testing is formulated as H0: $\mu 1 = \mu 2$, which focuses on the two population proportions being equal, and the alternative hypothesis that focuses on H1 (two-tailed): $\pi 1 \neq \pi 2$, which states that the two population proportions are not equal (Hoffman, 2021). Moreover, paired samples of the application of the sample proportions, whether the proportion of males who are SME and have used the digital transformation process is the same as the proportion of females within the hypotheses, based on the level of scaling metric, are utilized in the McNemar test for binary variables of the Chi-Square test that expand upon prior research. For instance, the study by Hu et al. (2024) did not employ quantitative analysis via a survey method. Instead, it focused on secondary data related to complex global and national collaborative networks in the context of SME digital transformation. Using cluster analysis of the national network diagram, the research tracked the development of collaboration by categorizing "Country" nodes through annual segmentation to display changes over time. Additionally, other analytical methods were used to conduct further statistical analyses.

Statistical Analysis

The statistical analysis employed the SPSS application, concentrating on dependent variables to examine the simultaneous effects of multiple factors and clarify inter-

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variable relationships. For instance, the surveyed population within gender and the SME ownership statistics were assessed using Descriptive Statistics Summary, Frequency Histogram within the surveyed questions, Mean Case Processing Summary, Hypothesis Test Summary, and Cross Tabulation within the Sample Chi-Square Test Summary and Paired Samples Proportions Tests (Malhotra, 2019). In a prior study by Hu et al. (2024), researchers investigated keyword themes within co-occurrence networks. They applied cluster labeling from related secondary literature, such as peer-reviewed and case archives. The findings revealed that small and medium-sized enterprises (SMEs) pursuing digital transformation through innovation were more inclined than larger corporations to take risks in developing new products, and discovered that some SMEs may have faced obstacles during the digital transformation process due to restricted financial resources.

This research study investigated what the best change management practices are to integrate digital transformation with workplace satisfaction, specifically within SMEs. The methodology emphasized the use of the Plan-Do-Check-Act (PDCA) framework for systematic improvement and compared its effectiveness to contemporary approaches such as the Octopus Org Model. The study evaluated both change management strategies through quantitative analysis, which formed the basis for the SurveyMonkey and SPSS analyses described in the results section.

Results Analysis

SPSS employed parametric statistical methods under the assumption that the population or the sampling distribution follows a normal distribution. Data were collected from small businesses using interval or ratio scales with a large sample size. The analysis included descriptive statistics for frequency histograms, correlation analysis, cross tabulation, t-tests to evaluate hypotheses about means, and both Chi-Square and Paired-Sample Proportions tests (Zikmund et al., 2013).

The responses from a sample of 100 participants with a saturation of 200 collected through Survey Monkey were analyzed using statistical methods described by Malhotra (2019). The analysis included descriptive statistics and frequency distributions, which were presented as histograms. For example, Figure 1, shown below, shows that 70 percent of the SME sample used proprietary data analytics moderately, and 17 percent across several PDCA phases of decision-making within the PDCA (Plan-Do-Check-Act) cycle.

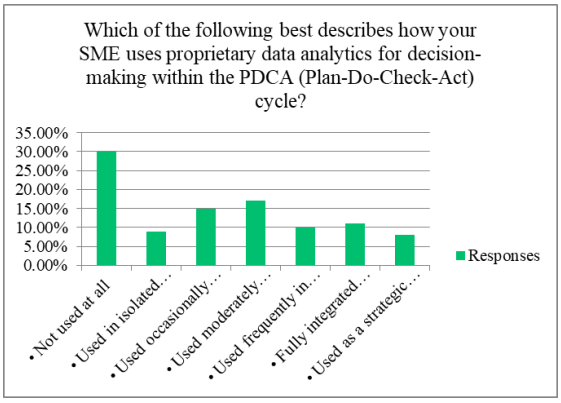

Figure 1

Figure 2 below shows that over 72 percent of respondents believe general-purpose generative AI platforms are currently a key part of their SME's change management practices, with 26 percent indicating a moderate extent of usage.

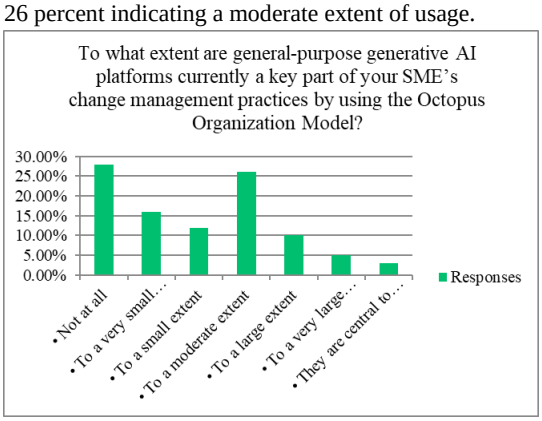

Figure 2

Figure 3 shows that around 72 percent of the respondents believe implementing the Octopus Organization Model could help their SME measure performance based on employee satisfaction, whereas 25 percent stated usage of it to a moderate extent.

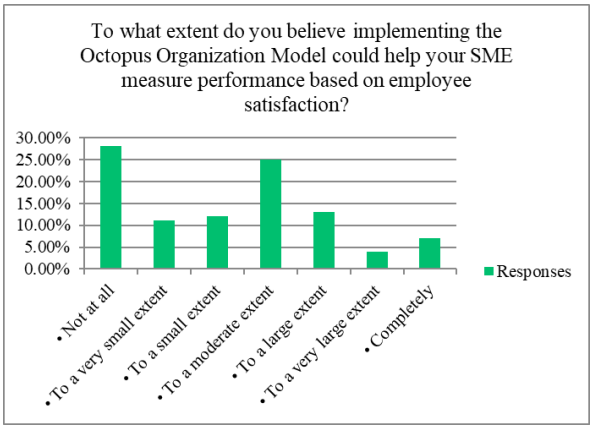

Figure 3

Figure 4 shows that 74 percent of respondents say their SME uses the PDCA (Plan-Do-Check-Act) cycle in their change management practices, whereby 38 percent of usage is to a small extent and/or to a moderate extent.

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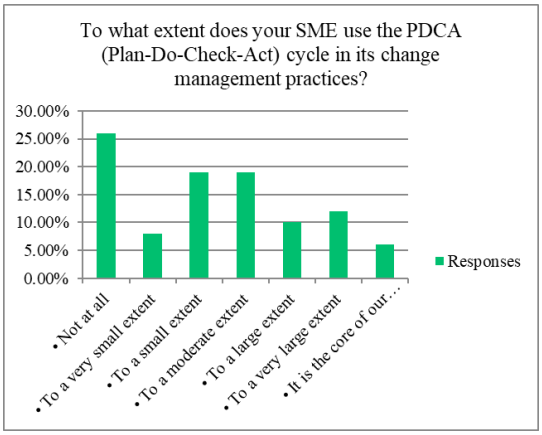

Figure 4

Figure 5 shows that 74 percent of respondents believed your SME's change management practices include evaluations of generative AI applications within the Octopus Organization Mode, in which 48 percent of respondents stated the usage of occasional evaluations, moderate evaluations, and frequent evaluations.

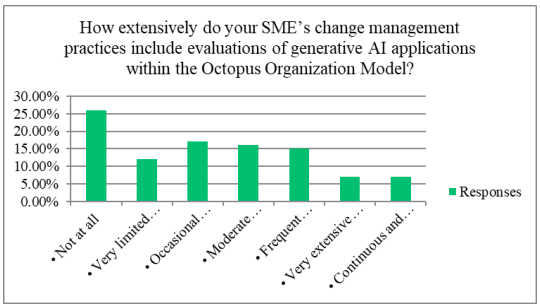

Figure 5

In SPSS Table 1, the cross-tabulation on how familiar their SME's change management model is with the Octopus Organization Model and its goals of driving organizational change and improving employee satisfaction shows that 69 percent of the respondents are familiar, whereby 34 percent stated they were slightly and/or somewhat familiar with the Octopus Organization Model.

Crosstab

			Gender		
			Male	Female	Total
How familiar is your SME's change management model with the Octopus Organization Model and its goals of driving organizational change and improving employee satisfaction?	• Not at all familiar	Count	12	19	31
		% within gender	22.6%	41.3%	31.3%
	• Slightly familiar	Count	12	5	17
		% within gender	22.6%	10.9%	17.2%
	• Somewhat familiar	Count	9	5	14
		% within gender	17.0%	10.9%	14.1%
	• Moderately familiar	Count	9	3	12
		% within gender	17.0%	6.5%	12.1%
	• Very familiar	Count	4	9	13
		% within gender	7.5%	19.6%	13.1%
	• Extremely familiar	Count	7	2	9
		% within gender	13.2%	4.3%	9.1%
	• We actively apply the model in practice.	Count	0	3	3
		% within gender	0.0%	6.5%	3.0%
Total		Count	53	46	99
		% within gender	100.0%	100.0%	100.0%

Table 1

Table 2 presents the results of the Pearson Chi-Square Test, indicating a two-sided significance value of 0.014. As this value is below the accepted significance threshold of 0.05, the

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null hypothesis cannot be accepted based on a separate variance estimate of use (Malhotra, 2019).

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	15.891[a]	6	.014
Likelihood Ratio	17.442	6	.008
N of Valid Cases	99		

a. 4 cells (28.6%) have an expected count less than 5. The minimum expected count is 1.39.

Table 2

Table 3 cross-tabulation addressed how your SME uses proprietary data analytics for decision-making within the PDCA (Plan-Do-Check-Act) cycle; 44 percent of male respondents, whereas 17 percent of the female respondents, stated occasional usage in some PDCA phases and moderate usage across several PDCA phases.

Crosstab

			gender		
			Male	Female	Total
Which of the following best describes how your SME uses proprietary data analytics for decision-making within the PDCA (Plan-Do-Check-Act) cycle?	• Not used at all	Count	12	18	30
		% within gender	22.2%	39.1%	30.0%
	• Used in isolated cases only	Count	5	4	9
		% within gender	9.3%	8.7%	9.0%
	• Used occasionally in some PDCA phases	Count	12	3	15
		% within gender	22.2%	6.5%	15.0%
	• Used moderately across several PDCA phases	Count	12	5	17
		% within gender	22.2%	10.9%	17.0%
	• Used frequently in most PDCA phases	Count	7	3	10
		% within gender	13.0%	6.5%	10.0%
	• Fully integrated into all PDCA phases	Count	4	7	11
		% within gender	7.4%	15.2%	11.0%
	• Used as a strategic driver across all PDCA activities	Count	2	6	8
		% within gender	3.7%	13.0%	8.0%
Total		Count	54	46	100
		% within gender	100.0%	100.0%	100.0%

Table 3

Table 4 presents the results of the Pearson Chi-Square Test, indicating a two-sided significance value of 0.036. This value is below the threshold of 0.05, thereby leading to the rejection of the null hypothesis within the separate variance estimate usage (Malhotra, 2019).

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	13.458[a]	6	.036
Likelihood Ratio	13.998	6	.030
N of Valid Cases	100		

a. 5 cells (35.7%) have an expected count less than 5. The minimum expected count is 3.68.

Table 4

Table 5 presents paired samples focusing on six surveyed questions, analyzed within two observation sets corresponding to the same group of respondents. The objective was to identify which question pairs exhibited the strongest correlations, thereby supporting the research hypothesis. The analysis revealed a significant correlation of 0.865 among respondents who discussed both the implementation of the Octopus Organization Model and the application of the PDCA (Plan-Do-Check-Act) cycle in SME change management practices. Specifically, two survey questions demonstrated this high correlation:

1. To what extent do you believe implementing the Octopus Organization Model could help your SME measure performance based on employee satisfaction?
2. To what extent does your SME use the PDCA (Plan-Do-Check-Act) cycle in its change management practices?

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Table 5

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	Which of the following best describes how your SME uses proprietary data analytics for decision-making within the PDCA (Plan-Do-Check-Act) cycle? To what extent do general-purpose generative AI platforms currently play a key role in your SME's change management practices, as defined by the Octopus Organization Model?	100	0.800	0.000	0.000
Pair 2	To what extent do you believe implementing the Octopus Organization Model could help your SME measure performance based on employee satisfaction? & To what extent does your SME use the PDCA (Plan-Do-Check-Act) cycle in its change management practices?	100	0.865	0.000	0.000
Pair 3	How extensively do your SME's change management practices include evaluations of generative AI applications within the Octopus Organization Model? How familiar is your SME's change management model with the Octopus Organization Model, particularly regarding its goals of driving organizational change and improving employee satisfaction?	99	0.817	0.000	0.000

Table 6

The discussion section further examines the statistical outcomes presented and interprets the inferential analysis of the sample data. The section also reviews the results and characteristics of prior studies relevant to the findings of this research.

Discussion

This study utilized SurveyMonkey's statistical analysis tools. It adopted a quantitative methodology, aligning with the framework of the McKinsey Global Survey (2022), which examined digital strategy and investment infrastructure among top-performing organizations (Kate Smaje et al., 2022, June 15). Furthermore, it builds upon the work of Kurniawanti et al. (2025), who employed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach in reviewing peer-reviewed articles concerning SMEs involved in digital transformation. This previous research ensured transparent and reproducible literature review processes by leveraging two principal academic databases to implement a Boolean search strategy for comprehensive coverage of peer-reviewed topics.

The SPSS statistical analysis revealed multiple factors and clarified the relationships between variables in the surveyed group, specifically within gender aspects of SME ownership. The hypothesis tested both the traditional PDCA (Plan-Do-Check-Act) methodology and the newer Octopus Organization Model. This approach builds on previous studies aimed at bridging the theory-practice gap in Industry 4.0 research by offering an easily applicable framework for SMEs (Kurniawanti et al., 2025). These results are key to understanding statistical outcomes, addressing the theory-practice divide in Industry 4.0 research, and demonstrating how both the traditional PDCA framework and the innovative Octopus Organization Model can function as theoretical models for change management as well as practical guides for SME digital transformation.

A limitation of this study is its exclusive reliance on quantitative methods, lacking insights into how businesses perceive external factors, such as government policies that may affect the adoption of digital technologies and platforms, and how these factors influence organizational strategy and IT capabilities, which are also shaped by corporate culture and management. Organizational strategies that integrate digital platforms consider both internal and external issues in the pursuit of digital transformation. Moreover, from a governmental standpoint, concerns regarding data security and privacy significantly influence SMEs' adoption of generative AI technology. Consequently, government programs must be more focused and precise to meet the distinct requirements of SMEs.

Conclusion

This study examined change management paradigms, presenting the Octopus Organization Model as an alternative to the conventional PDCA (Plan-Do-Check-Act) framework, particularly for SMEs implementing digital transformation and enhancing workplace satisfaction through generative AI. This research addressed a gap by comparing the application of the Octopus Organization Model with PDCA methodologies in change management for SMEs. The study emphasized that the Octopus Organization Model can connect theoretical frameworks with practical applications in Industry 4.0, assisting SMEs in leveraging generative AI to enhance employee satisfaction amid transitions. The findings indicated a robust correlation between familiarity with the PDCA cycle

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and the readiness to use contemporary Octopus Organization Model methodologies; success was also contingent upon adequate technological infrastructure and external engagement, bolstered by effective ways to address problems. However, drawbacks encompass a limited sample size and sector-specific analysis, thereby constraining wider applicability. Future research should investigate the effects of government legislation and cultural factors on general-purpose generative AI platforms in small and medium-sized enterprises (SMEs).

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