

Employee Adoption of Digital Tools in Traditional Work Environment

Georgiana MOICEANU*

National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

**Corresponding author, georgiana.moiceanu@upb.ro*

Marina-Alexandra CENUSE

National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

marina.cenuse@stud.faima.upb.ro

Mirona Ana Maria ICHIMOV

National University of Science and Technology Politehnica Bucharest, Bucharest, Romania

mirona.popescu@upb.ro

Onder KABAS

Akdeniz University, Antalya, Turkey

okabas@akdeniz.edu.tr

Abstract. *Digital transformation has increasingly influenced the way organizations operate, communicate, and manage internal processes, particularly within work environments traditionally characterized by conventional structures and routines. Although digital tools are frequently associated with improved efficiency, operational flexibility, and enhanced collaboration, their successful integration often depends on employees' willingness and ability to adapt to technological change. In this context, understanding the factors that influence digital tool adoption has become increasingly relevant for organizations undergoing digital transformation processes.*

The present study examines the adoption of digital tools among employees working in traditional organizational environments, with particular attention given to adaptability, organizational training and support, attitudes toward change, and digital adoption behavior. The research is grounded in established theoretical frameworks, including the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and Diffusion of Innovation Theory. The empirical analysis is based on data collected through an online questionnaire distributed to employees from multiple professional fields and organizational departments. The collected data were analyzed using descriptive and inferential statistical methods, including correlation analysis, regression models, crosstabulations, and Chi-square testing. The findings indicate that organizational support mechanisms, particularly training and technical assistance, positively influence employees' engagement with digital technologies. In addition, demographic differences, especially those related to age, were associated with variations in perceived adaptability toward digital tools. The study further emphasizes the importance of facilitating conditions, openness toward change, and user-oriented organizational strategies in supporting digital transformation initiatives. Overall, the article contributes to the understanding of employee-centered digital transformation processes and provides practical insights for organizations seeking to improve the integration of digital technologies within traditional work environments.

Keywords: digital tools, technology adoption, work environment, employee perspective, work efficiency.

Introduction

Digital transformation has progressively altered the way organizations structure workflows, communicate internally, and manage operational activities. Although the integration of digital technologies is frequently associated with increased efficiency and improved organizational responsiveness, the implementation process remains uneven across work environments shaped by traditional organizational routines. In many companies, the transition toward digital practices is not determined exclusively by technological availability, but also by employees' willingness to incorporate new tools into their daily professional activities.

Over the past decade, both public and private organizations have accelerated investments in digital infrastructures and technology-driven processes. Recent research has associated these developments with operational optimization, increased organizational flexibility, and improvements in information management practices (Haug et al., 2024; Hammerschmid et al., 2024; Bueno et al., 2024). At the same time, the expansion of digital systems has generated new organizational challenges related to employee adaptation, internal resistance to change, and disparities in digital competencies across workforce categories.

Existing studies frequently emphasize the technical and strategic dimensions of digitalization, while the employee perspective receives comparatively less attention, particularly in organizations where conventional work structures continue to dominate. The adoption of digital tools is often approached as a purely technological process, despite the fact that organizational change largely depends on behavioral acceptance, perceived usefulness, and the extent to which employees feel capable of adapting to new digital requirements. In practice, the effectiveness of digital transformation initiatives is closely connected to how employees interpret, experience, and integrate technological change within existing work routines.

Concerns regarding employee adaptation to digital environments have become increasingly relevant in the context of workforce heterogeneity. Variables such as age, educational background, previous exposure to technology, and organizational support mechanisms may influence the way digital tools are perceived and adopted. Prior research suggests that structured training, managerial support, and collaborative organizational cultures contribute positively to employees' confidence and engagement with digital technologies (Venkatesh et al., 2003; Priyanjani et al., 2024). At the same time, the persistence of digital inequalities among demographic groups indicates that technology adoption cannot be explained solely through access to technological infrastructure.

The theoretical foundations of technology adoption have been extensively explored through models such as the Diffusion of Innovation Theory, the Technology Acceptance Model (TAM), and the Unified Theory of Acceptance and Use of Technology (UTAUT). These frameworks explain adoption behavior through factors including perceived usefulness, ease of use, facilitating conditions, and social influence. Nevertheless, the practical implementation of digital transformation strategies often reveals a more complex interaction between organizational context and employee behavior than theoretical models alone may capture.

Against this background, the present study investigates employee adoption of digital tools within traditional work environments, with particular attention given to adaptability, training and support mechanisms, and behavioral openness toward technological change. The analysis further explores the relationship between demographic characteristics and digital adaptability, aiming to identify patterns that may support organizations in designing more effective digital transition strategies.

The study is guided by the following hypotheses:

H1: Age influences adaptability to digital tools.

H2: Training and organizational support positively influence the adoption of digital tools.

By combining theoretical perspectives on technology acceptance with empirical evidence collected from employees operating in different organizational contexts, the article seeks to contribute to the broader discussion concerning the human dimension of digital transformation processes.

Literature review

Technology adoption theories

Technology adoption has been widely examined in the literature as a process influenced by a combination of behavioral, organizational, and contextual factors. The implementation of new technologies within organizations does not depend solely on technical availability or infrastructure, but also on the extent to which individuals are willing to integrate digital systems into their existing work routines. As a result, research in this field has progressively expanded from purely technical perspectives toward approaches that incorporate psychological and social dimensions capable of explaining user behavior in organizational contexts.

Several theoretical models have contributed to the understanding of technology adoption mechanisms. Among the most influential is the Diffusion of Innovation Theory developed by Everett Rogers. Initially introduced in 1962, the theory explains how innovations spread within a social system and why certain individuals or groups adopt technologies earlier than others. Rogers argues that adoption is shaped by communication patterns, perceived advantages, compatibility with existing practices, and the degree to which an innovation is considered sufficiently new or beneficial by potential users. In this perspective, adoption is not viewed as an isolated action, but rather as part of a broader diffusion process influenced by social interaction and individual perceptions (Dearing & Cox, 2018).

The model also differentiates between categories of adopters, ranging from innovators and early adopters to individuals who adopt technologies at later stages. This distinction becomes particularly relevant in organizational environments characterized by varying levels of digital readiness. Employees do not respond uniformly to technological change, and differences in experience, exposure to technology, or organizational culture may significantly influence the pace of adoption.

An additional perspective on technology adoption was introduced by Fred Davis through the Technology Acceptance Model (TAM). Developed in the context of information systems research, TAM focuses on the cognitive factors that shape user acceptance of technology. The model identifies perceived usefulness and perceived ease of use as central determinants influencing adoption behavior. According to Davis, individuals are more likely to engage with technological systems when they perceive them as beneficial for improving work performance and sufficiently accessible in terms of usability.

Built upon the Theory of Reasoned Action, TAM contributed to shifting technology adoption research toward the analysis of behavioral intentions and subjective evaluations associated with digital systems. The model remains highly relevant in studies addressing organizational digital transformation because employee responses to technological change are often influenced by perceptions regarding efficiency, usability, and compatibility with daily work activities. Consequently, TAM continues to provide an important theoretical foundation for

understanding how employees interact with digital tools in both traditional and digitally evolving work environments (Figure 1).

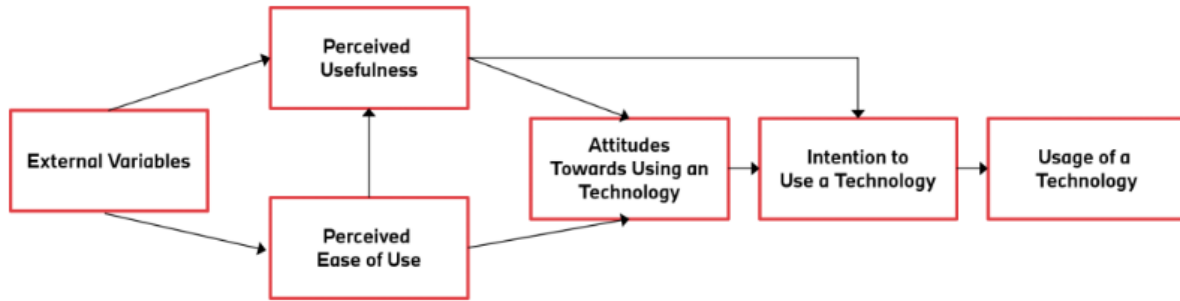


Figure 1. Technology adoption model

Source: Davis, 1989.

According to Everett Rogers (2003), innovation adoption involves a decision-making process through which individuals reduce uncertainty regarding the advantages and limitations of a new technology. Rogers identifies five stages within this process: knowledge, persuasion, decision, implementation, and confirmation. Together, these stages explain how individuals gradually evaluate and integrate innovations into their routines, particularly in organizational environments characterized by technological change. These stages usually occur in chronological order (Figure 2).

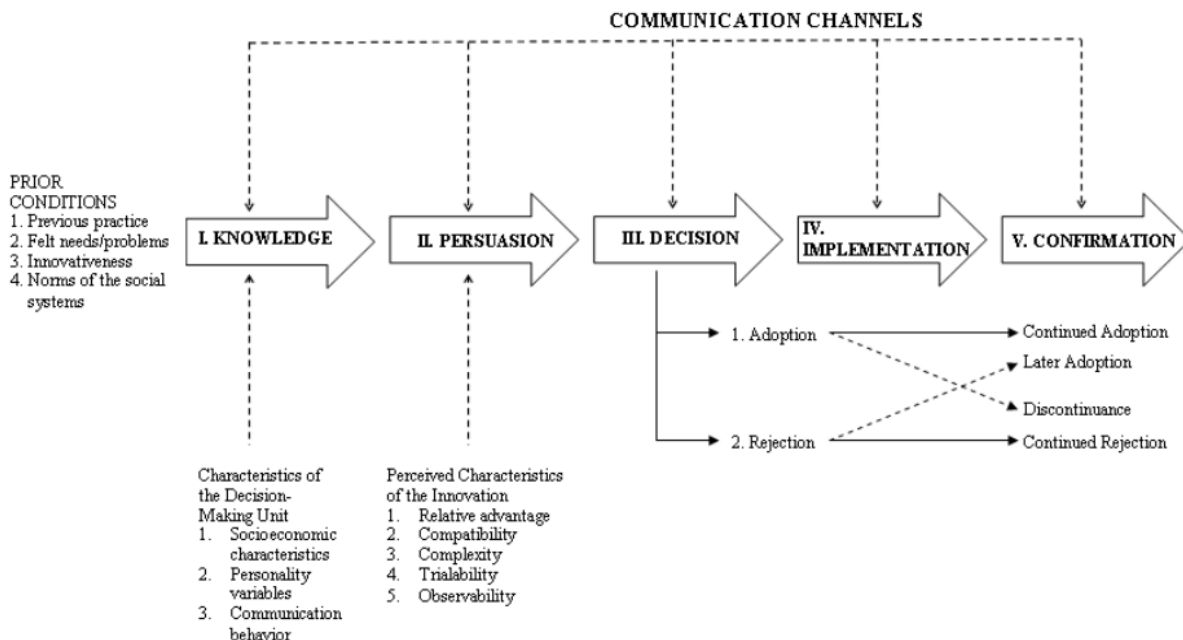


Figure 2. Model of Five Stages in the Innovation-Decision Process

Source: Rogers, 1989.

The Unified Theory of Acceptance and Use of Technology (UTAUT), introduced by Viswanath Venkatesh et al. (2003), was developed to explain technology acceptance and usage behavior by integrating elements from eight previously established adoption theories. The model

provides a broader perspective on the factors influencing technology adoption, particularly in organizational environments undergoing digital change (Figure 3).

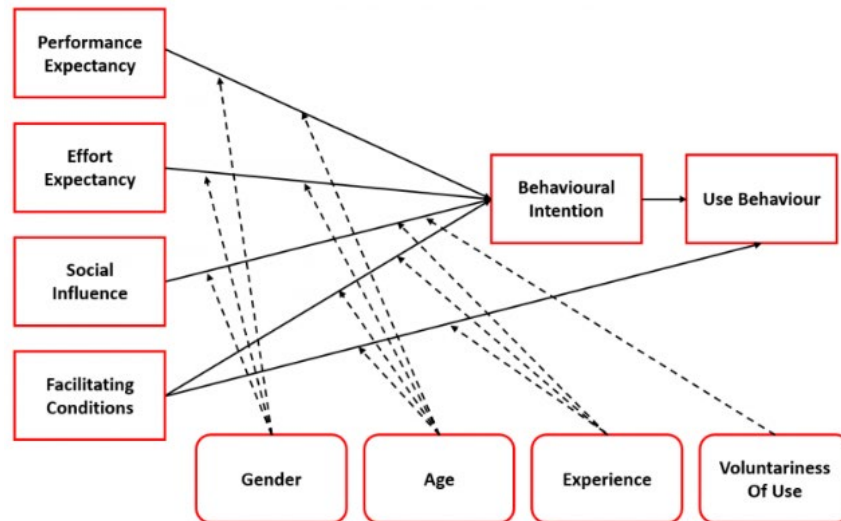


Figure 3. UTAUT Model

Source: Venkatesh et al., 2003.

According to the Unified Theory of Acceptance and Use of Technology, technology adoption is influenced by four central constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. In the original framework proposed by Viswanath Venkatesh et al. (2003), these dimensions were illustrated through the example of personal computer usage in organizational settings. Performance expectancy refers to the extent to which employees believe technology improves job performance, while effort expectancy reflects the perceived ease associated with its use. Social influence captures the impact of colleagues and supervisors on adoption behavior, whereas facilitating conditions refer to the organizational and technical support available to users.

Later extensions of the model, particularly UTAUT2, expanded its applicability beyond organizational environments and contributed significantly to research examining consumer acceptance and technology usage behavior (Venkatesh, 2020). Due to its integrative structure, the model remains widely used in studies addressing digital transformation and user interaction with emerging technologies.

In parallel, Everett Rogers identified several characteristics that influence the rate at which innovations are adopted within a social system. These include relative advantage, compatibility, complexity, trialability, and observability (Rogers, 1983). Together, these dimensions explain how individuals evaluate innovations and why some technologies diffuse more rapidly than others in organizational and social environments.

Another relevant perspective is offered by Critical Mass Theory, associated with the work of Marwell and Oliver (1993). The theory explains how individual decisions accumulate into broader collective behavior. In the context of technology adoption, the concept of critical mass becomes relevant when the increasing number of users contributes to wider acceptance and normalization of digital technologies within organizations.

Digital tools

The growing use of digital tools has substantially transformed the way organizations function, communicate, and coordinate activities within traditional work environments (Mitroi, 2012). Over the past decade, companies across multiple industries have increasingly relied on digital technologies not only to improve operational efficiency, but also to respond more rapidly to changing market conditions and evolving organizational demands. In many cases, digitalization has become an essential component of organizational competitiveness and long-term adaptability.

Within traditional workplaces, digital tools fulfill a wide range of operational and strategic functions. Communication technologies facilitate interaction between employees, departments, and management structures, supporting faster information exchange and more efficient coordination processes. At the same time, productivity tools assist employees in organizing tasks, managing schedules, and optimizing workflows, contributing to increased efficiency in everyday activities.

Collaboration platforms have also become increasingly important, particularly in environments where teamwork, project coordination, and document sharing are necessary for organizational performance. In parallel, social media tools are no longer used exclusively for external communication purposes, but are progressively integrated into branding, internal communication, marketing, and analytics strategies.

Technical and creative activities are similarly supported through specialized digital solutions. Development tools contribute to coding, testing, and software deployment processes, while design applications support the creation and refinement of visual content. Security technologies represent another essential component of digital work environments, particularly in the context of increasing concerns regarding cybersecurity and data protection (Gheorghica, 2010).

Organizations also rely extensively on data analysis and visualization tools to support decision-making and improve the interpretation of operational information. Likewise, DevOps technologies facilitate collaboration between development and operational teams while supporting process automation and software delivery efficiency. Additional categories of digital tools include customer relationship management (CRM) systems, learning and development platforms, and finance and accounting applications, all of which contribute to improving organizational coordination and performance.

Taken together, these categories illustrate the broad integration of digital technologies into contemporary organizational structures. Beyond their technical functions, digital tools increasingly influence organizational culture, employee interaction, and the capacity of firms to adapt to evolving business environments. As a result, understanding how employees perceive and adopt such technologies remains an important aspect of digital transformation research.

Methodology

The empirical component of the study focused on examining how employees adapt to digital transformation processes within traditional work environments, with particular attention given to the role of organizational training and support in facilitating technology adoption. In addition to organizational factors, the analysis also considered the influence of demographic characteristics and motivational aspects associated with employees' willingness to engage with digital tools in professional settings.

The research aimed to identify how variables such as age, educational background, and access to organizational support mechanisms may influence employees' openness toward integrating digital technologies into their daily activities. Data collection was conducted through

an online survey distributed via social media platforms, including WhatsApp, Instagram, and Facebook. The questionnaire remained active between March and May 2025.

- A. **Research Method:** The research was conducted using a questionnaire-based survey comprising 19 items designed to capture both demographic characteristics and perceptions related to digital tool adoption. The questionnaire included multiple-choice questions, dichotomous Yes/No items, and Likert-scale statements evaluated on a five-point scale ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”). The survey explored several dimensions associated with digital transformation in the workplace, including adaptability to digital tools, perceptions regarding organizational training and support, openness toward change, and behaviors related to the use of digital technologies. For the multi-item dimensions included in the analysis, composite indicators were calculated using the arithmetic mean of the corresponding items. No weighting procedures, additional transformations, or reverse-coded items were applied during data processing..
- B. **Research Instrument:** The questionnaire was developed and distributed through Google Forms and combined demographic variables with attitudinal and behavioral measures related to digital technology adoption. The instrument was structured into several thematic sections addressing adaptability to digital tools (Q6–Q8), training and organizational support (Q9–Q12), attitudes toward digital change (Q13–Q15), and digital adoption behavior (Q16–Q18). In addition, respondents were asked to evaluate the perceived usefulness of digital tools through a final dichotomous question.
- C. **Research Sample:** The study targeted employees working in different organizational departments, including IT, Marketing, Human Resources, Finance, and related operational areas. Participation was limited to individuals actively engaged in professional activities involving interaction with digital technologies in the workplace. The final sample included 100 respondents with diverse demographic profiles in terms of age, gender, educational background, professional experience, and departmental affiliation.
- D. **Data Collection:** Data were collected through an online survey distributed in the form of a web link across multiple digital communication channels. Participation was voluntary, and responses were recorded anonymously in order to ensure confidentiality and encourage authentic feedback from participants. The online platform automatically centralized the responses, facilitating their subsequent export and preparation for statistical analysis.
- E. **Data Analysis:** Following the data collection stage, responses were coded and organized using a predefined SPSS database structure. The analysis combined descriptive and inferential statistical techniques in order to identify patterns and relationships within the dataset. Descriptive statistics were initially employed to examine response distributions and central tendencies, while Pearson correlations, linear regression models, crosstabulations, and Chi-square tests were subsequently used to test the proposed hypotheses. Statistical processing was conducted using IBM SPSS and Microsoft Excel.

Results and discussions

The following section presents the main findings related to adaptability to digital tools, training and organizational support, attitudes toward change, and digital adoption behavior. In addition to the descriptive statistical overview, the analysis further examines several relationships between variables in order to identify patterns associated with employees’ responses to digital transformation processes within traditional work environments.

Results regarding Adaptability to Digital Tools

Table 1. Statistics regarding Adaptability to Digital Tools Variables

		Adapt confidence	Adapt quickly	Adapt willingness
N	Valid	100	100	100
	Missing	0	0	0
Mean		3.71	3.81	3.65
Median		4	4	4
Mode		4	4	4
Std. Deviation		1.085	0.895	1.038

Source: Author's own work, created using SPSS.

The results related to adaptability indicate generally favorable perceptions toward the use of digital technologies in the workplace. Respondents reported moderate to high levels of confidence in learning how to use new digital tools, with an average score of 3.71. Although the responses were relatively positive overall, the standard deviation (1.085) suggests the presence of noticeable differences in the way employees perceive their own ability to adapt to technological change.

Among the adaptability dimensions analyzed, the highest average score was recorded for the ability to adapt quickly to newly introduced digital technologies ($M = 3.81$). The lower variability associated with this indicator ($SD = 0.895$) reflects a more homogeneous perception across participants, indicating that many respondents consider themselves capable of adjusting relatively efficiently to digital changes within the organizational environment.

Willingness to use new digital tools even in situations where their use is not mandatory also generated positive responses, with a mean value of 3.65. At the same time, the variability observed within the responses ($SD = 1.038$) suggests that openness toward voluntary digital adoption is not equally distributed across the sample. While a substantial proportion of employees appear receptive to experimenting with new technologies, others may require additional motivation, organizational encouragement, or support mechanisms before fully engaging with digital tools.

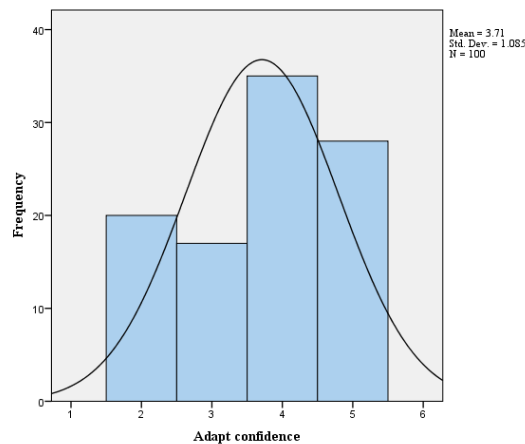


Figure 4. Histogram regarding Adaptability confidence

Source: Author's own work, created using SPSS.

The distribution presented in the histogram indicates that most respondents evaluated their adaptability confidence within the upper half of the scale, predominantly selecting values between 3 and 5. This pattern is consistent with the descriptive statistical results, where the average score reached 3.71 and the most frequent response was 4. Although individual perceptions vary to some extent, the overall tendency suggests that respondents generally feel capable of learning and adapting to new digital technologies introduced in the workplace.

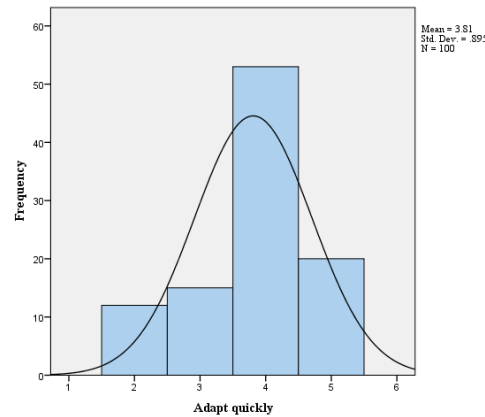


Figure 5. Histogram regarding *Adaptability quickly*

Source: Author's own work, created using SPSS.

The histogram illustrates a clear concentration of responses in the higher categories of the scale, particularly around values 4 and 5, suggesting that respondents generally perceive themselves as adapting relatively quickly to digital tools. This distribution is consistent with the descriptive results, where the highest average score within the adaptability category was recorded for this indicator ($M = 3.81$). In addition, the relatively limited dispersion of responses reflects a comparatively consistent perception among participants regarding their ability to adjust to digital changes in the workplace.

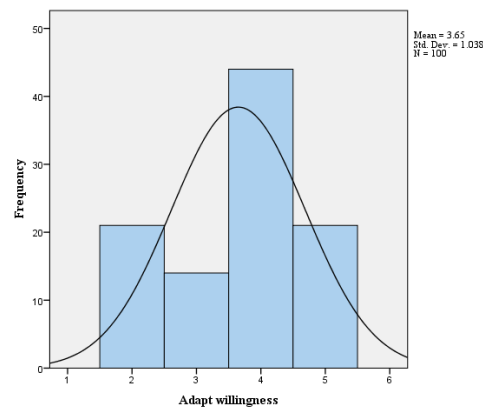


Figure 6. Histogram regarding *Adaptability willingness*

Source: Author's own work, created using SPSS.

The distribution of responses indicates that most participants selected values situated in the medium-to-high range of the scale, pointing toward a generally positive willingness to use digital tools even when their adoption was not formally required. This pattern corresponds with the

descriptive statistical results, where the average score reached 3.65 and the most frequent response was 4. Overall, the findings suggest a relatively favorable orientation toward voluntary engagement with digital technologies, although individual differences in openness to adoption remain visible across the sample.

Results regarding Training and Support

Table 2. Statistics regarding Training and Support Variables

		Training sufficient	Support available	Training confidence	Training investment
N	Valid	100	100	100	100
	Missing	0	0	0	0
Mean		4.42	4.50	4.46	4.65
Median		4	4.5	4	5
Mode		4	4a	4	5
Std. Deviation		0.496	0.503	0.501	0.479

a. Multiple modes exist. The smallest value is shown*

Source: Author's own work, created using SPSS.

The results associated with training and organizational support reveal a predominantly positive perception among respondents regarding the assistance received during the adoption of digital tools. The perceived adequacy of training recorded a high average score ($M = 4.42$), indicating that participants generally considered the training provided by their organizations to be sufficient for supporting digital adaptation processes. The relatively limited variability of responses ($SD = 0.496$) further suggests a consistent evaluation across the sample.

Perceptions regarding the availability of support mechanisms during technology adoption were similarly favorable. With a mean score of 4.50, respondents largely agreed that assistance—whether in the form of technical guidance, managerial support, or collaboration with colleagues—was accessible when needed. The low dispersion of responses ($SD = 0.503$) indicates a relatively shared perception concerning the presence of organizational support structures.

Employees also expressed strong agreement regarding the contribution of training activities to the development of digital competencies. The average score of 4.46 suggests that participants generally perceived training programs as effective in improving their ability to work with digital technologies. Once again, the responses displayed a high degree of consistency ($SD = 0.501$), reflecting similar evaluations among respondents.

The highest average value within this category was associated with organizational investment in digital training initiatives ($M = 4.65$). This result indicates that respondents perceive companies as actively allocating resources toward employee development in the context of digital transformation. The limited variability observed for this indicator ($SD = 0.479$) reinforces the overall consistency of this perception across the analyzed sample.

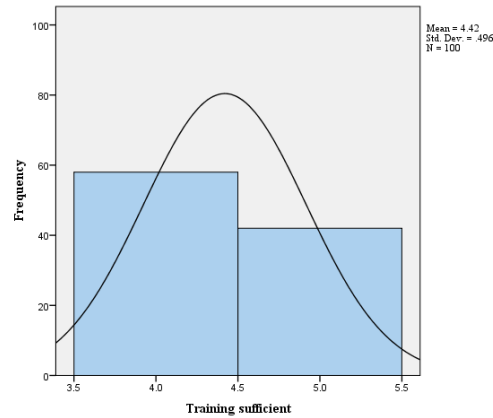


Figure 7. Histogram regarding *Training sufficient*

Source: Author's own work, created using SPSS.

The distribution illustrated in the histogram is concentrated primarily around the value 4, with comparatively fewer responses located at the lower or upper ends of the scale. This pattern is consistent with the descriptive statistical results, particularly the average score of 4.42 and the limited variability of responses ($SD = 0.496$). Overall, the findings suggest a relatively uniform perception among respondents that the training received was adequate for supporting the use of digital tools in the workplace.

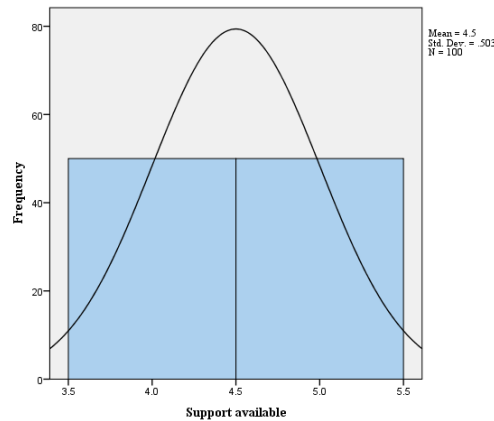


Figure 8. Histogram regarding *Support available*

Source: Author's own work, created using SPSS.

The histogram reflects a clear concentration of responses within the upper range of the scale, particularly between values 4 and 5, suggesting that respondents generally perceived organizational support as accessible throughout the digital adoption process. This distribution aligns with the high average score recorded for this indicator ($M = 4.50$), reinforcing the perception that support mechanisms were consistently available across the organizations represented in the sample.

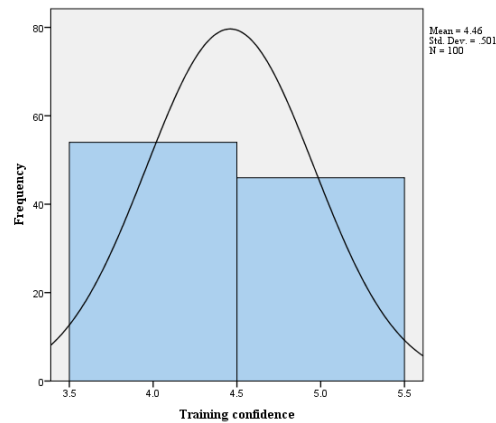


Figure 9. Histogram regarding *Training confidence*

Source: Author's own work, created using SPSS.

The histogram associated with training confidence indicates that most responses were concentrated in the higher categories of the scale, mainly between 4 and 5. This distribution is consistent with the average value obtained for this variable ($M = 4.46$) and suggests that respondents generally perceived training activities as beneficial for improving their ability to use digital tools effectively within the workplace.

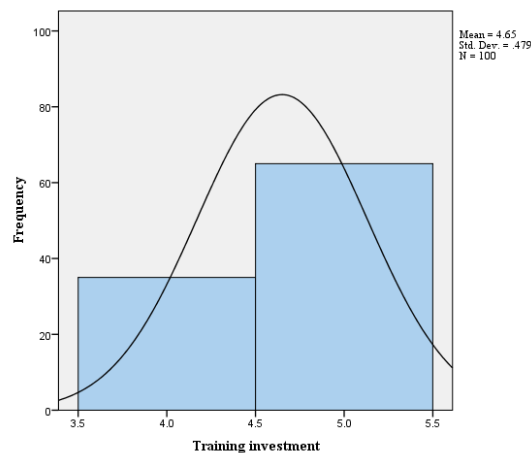


Figure 10. Histogram regarding *Training investment*

Source: Author's own work, created using SPSS.

The distribution presented in the histogram is strongly concentrated around the highest value of the scale, indicating that respondents largely perceive their organizations as actively investing in digital training initiatives. This visual pattern corresponds with the highest average score recorded within the training and support category ($M = 4.65$), suggesting a broadly shared perception that organizational commitment toward employee digital development is both visible and significant.

Results regarding Attitude Toward Change

The histogram reveals a pronounced concentration of responses at the upper end of the scale, particularly around the maximum value, indicating that respondents strongly perceive organizational investment in digital training as substantial. This tendency is consistent with the highest mean score observed within the training and support dimension ($M = 4.65$), highlighting a relatively consistent perception that organizations allocate visible efforts and resources toward employee digital skill development.

Table 3. Statistics regarding Attitude Toward Change Variables

		Attitude experiment	Attitude open	Attitude motivation
N	Valid	100	100	100
	Missing	0	0	0
Mean		4.55	4.44	4.47
Median		5	4	4
Mode		5	4	4
Std. Deviation		0.500	0.499	0.502

Source: Author's own work, created using SPSS.

The results related to openness toward change indicate a generally favorable attitude among respondents regarding the adoption of new working methods and digital innovations. The average score obtained for this variable ($M = 4.44$) reflects a high level of receptiveness to organizational and technological change. In addition, the limited variability of responses ($SD = 0.499$) suggests a relatively homogeneous perception across the sample, indicating that openness toward digital transformation is broadly shared among participants.

Similarly, motivation to engage with change-related processes recorded a high average value ($M = 4.47$), suggesting that respondents generally perceive themselves as motivated to adapt to evolving organizational requirements associated with digital transformation. The consistency of responses observed for this variable ($SD = 0.502$) further indicates a stable tendency among participants to maintain an active and engaged attitude toward technological and organizational change.

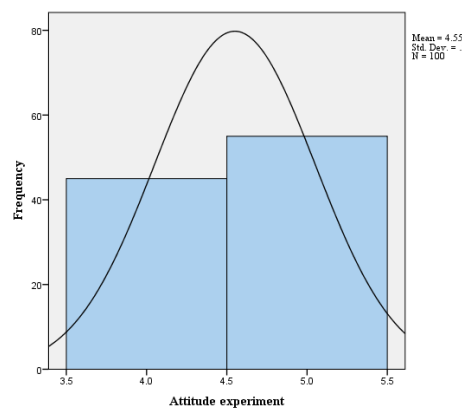


Figure 11. Histogram regarding Attitude Toward Experimentation

Source: Author's own work, created using SPSS.

The histogram shows that responses are predominantly concentrated within the upper categories of the scale, particularly around values 4 and 5. This distribution is consistent with the descriptive statistical results ($M = 4.55$) and suggests a strong tendency among respondents to engage with experimentation and to remain open to trying new ideas, approaches, and digital tools within the organizational environment.

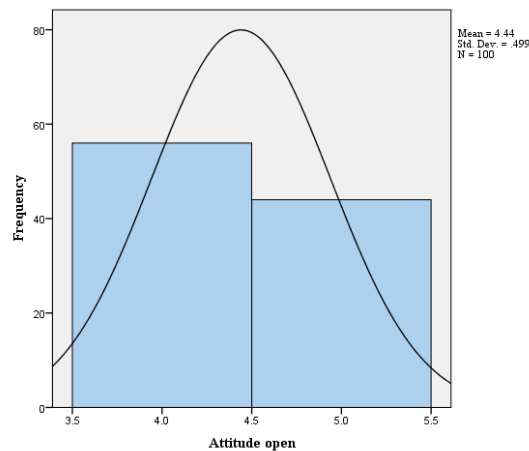


Figure 12. Histogram regarding *Attitude Toward Openness*

Source: Author's own work, created using SPSS.

The distribution of responses is concentrated mainly in the higher categories of the scale, particularly around values 4 and 5, indicating a relatively consistent openness toward change among respondents. This pattern aligns with the average score obtained for this variable ($M = 4.44$) and suggests that participants generally perceive organizational change and digital transformation in a favorable manner, reflecting a work environment characterized by flexibility and adaptability.

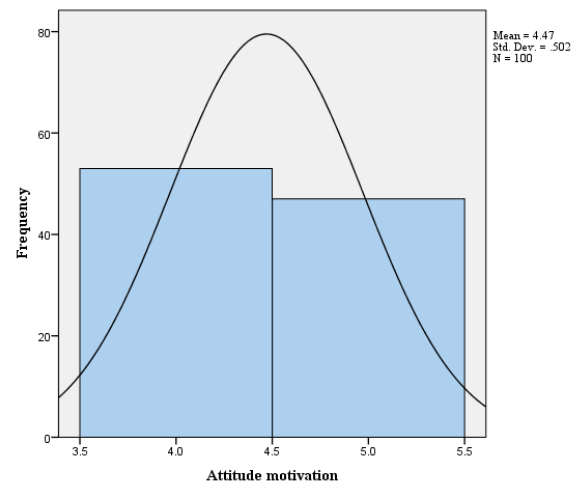


Figure 13. Histogram regarding *Attitude Toward Motivation*

Source: Author's own work, created using SPSS.

The histogram associated with motivation toward change indicates that most responses were situated within the upper range of the scale, primarily around values 4 and 5. This distribution corresponds with the average score obtained for this indicator ($M = 4.47$) and suggests that

respondents generally display a proactive attitude toward organizational and digital transformation processes. The results further indicate that employees tend to remain engaged and motivated when adapting to technological change within the workplace.

Results regarding Digital Tool Adoption Behavior

The results related to active digital adoption indicate that respondents generally perceive themselves as frequent users of digital tools within their everyday professional activities. The average score obtained for this variable ($M = 4.42$) reflects a high level of engagement with digital technologies in the workplace. At the same time, the relatively limited dispersion of responses ($SD = 0.496$) suggests a consistent perception across participants regarding their active involvement in the use of digital systems.

A similarly positive pattern was identified for the willingness to explore and experiment with new digital tools. The average value recorded for this indicator ($M = 4.44$) points toward a strong openness among respondents to discovering and testing innovative digital solutions. The low variability observed within the responses ($SD = 0.499$) further indicates that exploratory behavior toward digital technologies is relatively common and uniformly distributed across the analyzed sample.

Table 4. Statistics regarding *Digital Tool Adoption Behavior Variables*

		Adoption active	Adoption explore	Adoption integrate
N	Valid	100	100	100
	Missing	0	0	0
Mean		4.42	4.44	4.51
Median		4	4	5
Mode		4	4	5
Std. Deviation		0.496	0.499	0.502

Source: Author's own work, created using SPSS.

The highest average value within the digital adoption behavior category was recorded for the integration of digital tools into daily workflows ($M = 4.51$). This result suggests that respondents do not merely use digital technologies occasionally, but have incorporated them into routine professional activities to a considerable extent. The relatively low standard deviation ($SD = 0.502$) indicates limited variability among responses, reflecting a generally consistent perception regarding the integration of digital tools within the workplace environment.

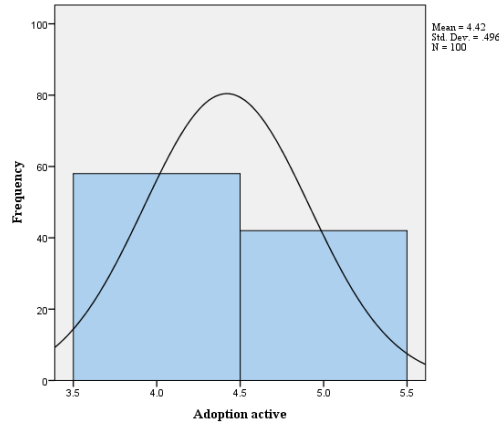


Figure 14. Histogram regarding *Actively adoption*

Source: Author's own work, created using SPSS.

The histogram illustrates that most respondents positioned their answers within the higher categories of the scale, particularly between values 4 and 5, indicating a high level of active engagement with digital tools in everyday professional activities. This distribution is consistent with the average score obtained for this variable ($M = 4.42$) and reflects the widespread integration of digital technologies into routine workplace practices among the participants included in the study.

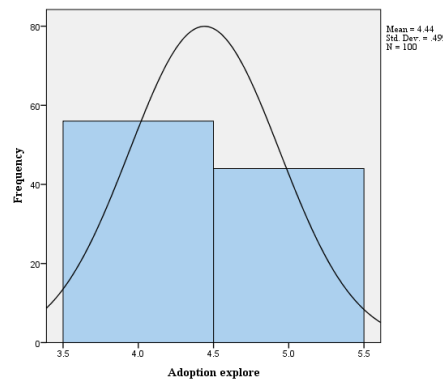


Figure 15. Histogram regarding *Exploring adoption*

Source: Author's own work, created using SPSS.

The distribution of responses related to the exploration of digital tools is concentrated mainly around the upper values of the scale, particularly 4 and 5, suggesting that respondents are generally open to testing and discovering new digital solutions. This pattern corresponds with the average score obtained for this variable ($M = 4.44$) and indicates a relatively strong exploratory orientation toward emerging technologies within the workplace environment.

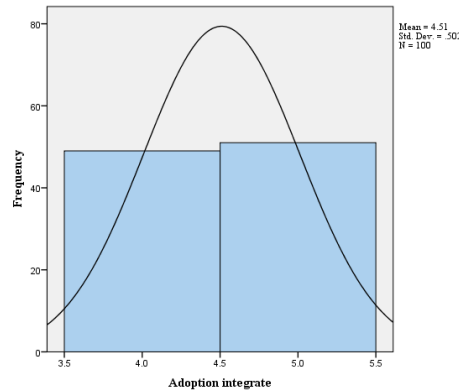


Figure 16. Histogram regarding *Integrating adoption*

Source: Author's own work, created using SPSS.

The histogram associated with the integration of digital tools shows that a substantial proportion of responses were concentrated at the highest value of the scale. This distribution is consistent with the average score obtained for this indicator ($M = 4.51$) and suggests that digital technologies are not only present within organizational activities, but are increasingly embedded into employees' routine workflows. The findings point toward a relatively advanced level of digital adoption among the respondents included in the study.

Results regarding Individual, Relevant variable

As illustrated in Figure 17, most respondents perceived digital tools as useful within their professional activities, with 92% providing a positive response. Only a limited proportion of participants expressed a negative perception regarding their usefulness. This distribution indicates a broadly favorable evaluation of digital technologies in the workplace and supports the overall tendency observed throughout the analysis, namely a relatively high level of adaptability, openness toward digital change, and integration of digital tools into routine organizational activities.

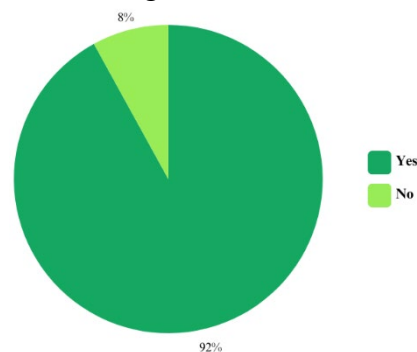


Figure 17. Perceived usefulness of digital tools

Source: Author's own work.

Inferential Statistics

The next stage of the analysis focuses on the relationships identified between the variables included in the study through the use of inferential statistical techniques. Crosstabulations, correlation analysis, and regression models were employed in order to examine patterns of association and to

better understand the interactions between demographic factors, organizational support mechanisms, and digital adoption behaviors within the analyzed sample.

Results regarding Crosstabulations

Table 5. Crosstabulation regarding Age and Adapt quickly

		Adapt quickly					
		Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Total (%)
Age	Under 25	0	0	0	9	7	16
	25-34 years	0	0	0	22	13	35
	34-44 years	0	7	6	12	0	25
	45-54 years	0	1	3	4	0	8
	55 and above	0	4	6	6	0	16
Total		0	12	15	53	20	100

Source: Author's own work, created using SPSS.

Table 6. Chi-square test regarding Crosstabulation Age and Adapt quickly

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	51.794a	12	0
Likelihood Ratio	68.583	12	0
Linear-by-Linear Association	32.311	1	0
N of Valid Cases	100		

Source: Author's own work, created using SPSS.

The crosstabulation analysis indicates the existence of a significant relationship between age and perceived adaptability to digital tools. Respondents belonging to younger age categories, particularly those under 35 years old, were more likely to report that they adapt quickly to digital technologies, with the 25–34 age group registering the highest proportion of “strongly agree” responses. By comparison, participants from older age groups showed a greater tendency to select neutral or disagreement categories. The statistical significance of the Pearson Chi-Square test ($\chi^2 = 51.794$, $df = 12$, $p < .001$) supports the existence of an association between age and adaptability, suggesting that perceptions regarding the ability to adjust to digital technologies tend to vary across age categories.

Table 7. Crosstabulation regarding Educational level and Training sufficient

		Training sufficient					
		Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)	Total (%)
Educational level	High School	0	0	0	4	2	6
	Bachelor's Degree	0	0	0	31	12	43
	Master's Degree	0	0	0	19	20	39
	Doctorate	0	0	0	4	8	12
Total		0	0	0	58	42	100

Source: Author's own work, created using SPSS.

The crosstabulation results suggest a positive association between educational attainment and perceptions regarding the adequacy of organizational training. Respondents holding master's and doctoral degrees were more likely to select the highest agreement categories, whereas

participants with lower educational levels showed comparatively lower levels of agreement. Overall, the findings indicate that perceptions of training sufficiency tend to become more favorable as educational level increases.

Table 8. Chi-square test regarding Crosstabulation Educational level and Training sufficient

	Chi-Square Tests		
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.068	3	0.045
Likelihood Ratio	8.186	3	0.042
Linear-by-Linear Association	6.797	1	0.009
N of Valid Cases	100		

Source: Author's own work, created using SPSS.

The Chi-Square test confirms this association is statistically significant ($\chi^2 = 8.086$, $p = .045$), with a notable linear trend ($p = .009$). Although some expected counts were low, the sample size ($N = 100$) supports the reliability of the results. Overall, higher education is linked to greater perceived training sufficiency.

Results regarding Correlation

Table 9. Correlation regarding Age and Adaptability to Digital Tools

		Age	Adaptability
Age	Spearman's Correlation	1	-0.776**
	Sig. (2-tailed)		0
	N	100	100

** Correlation is significant at the 0.01 level (2-tailed).

Source: Author's own work, created using SPSS.

Spearman's rank-order correlation showed a strong, negative relationship between age and adaptability ($\rho = -.776$, $p < .001$), indicating that as age increases, adaptability tends to decrease. This correlation is statistically significant, suggesting that older individuals in the sample consistently reported lower levels of adaptability compared to younger ones.

Results regarding Regressions

Table 10. Regression regarding Age and Adaptability to Digital Tools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.718a	0.515	0.510	0.58577

a. Predictors: (Constant), Age

Source: Author's own work, created using SPSS.

The simple linear regression analysis confirmed that age is a significant predictor of adaptability. The model explained 51.5% of the variance in adaptability scores ($R^2 = .515$), indicating a substantial relationship between the two variables.

The regression coefficient for age was negative ($\beta = -.718$, $p < .001$), showing that as age increases, adaptability scores tend to decrease. Specifically, for each additional year of age, adaptability was predicted to drop by 0.467 points. These results reinforce the pattern observed in

the correlation analysis, highlighting a consistent and significant decline in adaptability with increasing age.

Table 11. Regression regarding *Educational level* and *Training support*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.232a	0.054	0.044	0.24921

a. Predictors: (Constant), Educational level

Source: Author's own work, created using SPSS.

The regression analysis examining the relationship between educational level and perceived training support identified a statistically significant, although relatively limited, positive association ($R^2 = .054$, $p = .020$). The results indicate that educational attainment explains a modest proportion of the variability in perceptions regarding organizational training support. Respondents with higher levels of education generally reported more favorable evaluations of the support and training provided within their organizations.

At the same time, the relationship identified between adaptability and digital adoption behavior suggests that behavioral flexibility plays an important role in facilitating the integration of digital technologies into routine organizational activities. Employees who perceive themselves as more adaptable also tend to report higher levels of engagement with digital tools, particularly in environments characterized by ongoing technological change.

The association observed between attitudes toward digital change and adoption behavior is also consistent with the assumptions proposed by the Technology Acceptance Model (Davis, 1989; Venkatesh et al., 2003). Positive perceptions regarding digital transformation appear to contribute to greater openness toward the use and integration of technological systems within professional activities. Even in organizational contexts where digital adoption may be partially imposed by operational requirements, employee attitudes continue to influence the extent of behavioral engagement with digital tools.

In addition, the findings related to training and organizational support reinforce the relevance of facilitating conditions, as conceptualized within UTAUT. Support mechanisms capable of reducing uncertainty and increasing familiarity with digital systems appear to contribute positively to employees' responsiveness toward technological change.

The differences identified across age groups further suggest that demographic heterogeneity may influence patterns of digital adaptation. Rather than reflecting direct resistance to technology, these variations may be associated with differences in previous exposure to digital environments and technological experience. Consequently, the results underline the importance of organizational strategies capable of accommodating diverse employee needs during digital transformation processes.

Discussion

The relatively strong associations identified between adaptability, attitudes toward digital change, and adoption behavior were further considered from a methodological perspective in order to evaluate potential multicollinearity concerns. Although these variables display meaningful statistical relationships, the observed coefficients remain within the ranges commonly accepted in behavioral and organizational research (Venkatesh & Bala, 2008). In this context, the correlations

are more appropriately interpreted as reflecting conceptual proximity between theoretically related constructs rather than redundancy between variables.

From an analytical perspective, multicollinearity generally becomes problematic when tolerance values fall below accepted thresholds or when variance inflation factors reach excessive levels. The overall pattern observed in the present study does not indicate the presence of such distortions. Instead, the relationships identified appear consistent with the logic of technology adoption models, where adaptability, attitudinal orientation, and actual digital behavior represent interconnected dimensions of the same organizational transformation process.

This interpretation is also supported at a substantive level. Employees' perceptions regarding technology, their openness toward change, and their practical integration of digital tools are unlikely to operate independently within organizational settings undergoing digital transformation. Rather, these dimensions tend to evolve simultaneously and mutually reinforce one another as organizations become increasingly reliant on digital infrastructures and technology-supported workflows.

The findings related to age differences are similarly consistent with existing literature examining digital inequality and disparities in technology adoption. Previous studies have highlighted the persistence of age-related differences in digital access, skills, and adaptability, particularly during the COVID-19 period, when reliance on digital systems intensified considerably (Song et al., 2021; Ramsetty & Adams, 2020). However, research conducted by Barreda et al. (2024) suggests that these disparities existed well before the pandemic and should be understood as part of a broader structural phenomenon associated with technological exclusion. The present findings support this perspective and provide additional evidence in favor of hypothesis H1, indicating that adaptability to digital technologies tends to vary across demographic categories.

The broader organizational implications of digital technology adoption are also reflected in previous research emphasizing the contribution of digitalization to operational efficiency and organizational responsiveness. The integration of digital tools has been associated with workflow optimization, automation of administrative activities, and improved organizational flexibility, enabling firms to react more rapidly to market changes (Nusantara et al., 2024; Bueno et al., 2024). The results obtained in the present study align with these observations, particularly through the high levels of perceived usefulness, organizational support, and integration of digital tools identified among respondents.

At the same time, the employee perspective remains essential in understanding the practical success of digital transformation initiatives. Prior research has shown that digital technologies can contribute to improved coordination, decision-making, and project responsiveness, especially in contexts involving distributed collaboration and real-time information exchange (Priyanjani et al., 2024). In this regard, the findings suggest that organizational support mechanisms and favorable employee attitudes may facilitate not only technology adoption itself, but also the broader integration of digital practices into everyday organizational processes.

Finally, the results reinforce the relevance of user-centered perspectives and human-computer interaction within contemporary digital work environments. Employees' experiences with digital systems are influenced not only by technological functionality, but also by the extent to which digital interfaces remain accessible, intuitive, and compatible with existing workflows. Similar conclusions were highlighted by Weritz et al. (2022), who emphasized the relationship between effective human-computer interaction and organizational performance. Walker (2024)

further argues that user-oriented technological design can positively influence employee engagement and overall productivity by facilitating interaction between individuals and digital systems.

The Technology Acceptance Model (TAM) incorporates a series of constructs intended to explain how users develop perceptions, attitudes, behavioral intentions, and actual usage patterns toward technological systems (Venkatesh et al., 2003). Despite the extensive application of TAM in technology adoption research, the role of employee training in shaping adoption behavior has received comparatively less empirical attention, particularly in relation to organizational digital transformation processes (Marler et al., 2006). More recent contributions, including the work of Handrich and Otterbach (2024), argue for the extension of TAM-based approaches through the inclusion of training-related dimensions capable of capturing the influence of learning intensity, support structures, and training formats on technology acceptance.

The findings of the present study support this perspective and contribute to the broader discussion regarding employee digital readiness and organizational support mechanisms. The results associated with hypothesis H2 indicate that training and support remain important elements in facilitating digital adaptation processes. In addition, respondents with higher educational attainment tended to evaluate organizational training support more favorably, although the relationship identified remained relatively limited in magnitude.

The results concerning perceived usefulness and digital adoption behavior are also consistent with the central assumptions of TAM, where perceived usefulness represents one of the primary determinants of technology acceptance. Similar relationships have been repeatedly confirmed in previous empirical studies and literature reviews addressing organizational technology adoption. At the same time, the differences identified across age categories may be interpreted through the moderating mechanisms proposed within UTAUT, as well as through more recent research examining technology adoption in demographically heterogeneous work environments.

Taken together, these findings suggest that organizational support structures, particularly training initiatives and continuous technical assistance, play an important role in reducing disparities associated with digital adaptation. In this context, digital transformation appears to depend not only on technological infrastructure, but also on the extent to which organizations create conditions that facilitate employee engagement with digital systems across different demographic and professional categories.

Conclusion

The adoption of digital tools within traditional organizational environments remains a multidimensional process influenced by technological, organizational, and individual factors. The present study aimed to examine how employees perceive and integrate digital technologies in workplace settings where conventional organizational structures and routines continue to play an important role. By combining theoretical perspectives on technology acceptance with empirical evidence collected from employees across different professional areas, the research provides additional insight into the mechanisms that support digital adaptation processes within organizations.

The findings support the first hypothesis (H1), indicating that adaptability to digital technologies differs across demographic categories, particularly with respect to age. Younger respondents generally reported higher levels of perceived adaptability and greater ease in adjusting

to digital systems, while older participants displayed comparatively lower levels of confidence and flexibility toward technological change. These results are consistent with previous studies addressing digital inequality and age-related differences in technology adoption, while also reinforcing the relevance of demographic heterogeneity in organizational digital transformation processes.

The second hypothesis (H2) was likewise supported through the positive relationship identified between organizational training, support mechanisms, and digital adoption behavior. Respondents who perceived training activities and organizational assistance more favorably also reported stronger engagement with digital tools and greater integration of technological systems into their professional routines. These findings underline the importance of facilitating conditions, organizational support structures, and continuous learning opportunities in reducing uncertainty associated with technological change.

The study also highlights the relevance of employee attitudes and behavioral flexibility within digital transformation initiatives. Positive perceptions regarding digital tools, together with openness toward experimentation and organizational change, were associated with higher levels of digital integration. In this regard, the results further support the applicability of frameworks such as TAM and UTAUT in explaining technology acceptance within workplace environments characterized by ongoing digitalization.

From a practical perspective, the findings suggest that organizations should approach digital transformation not only as a technical or infrastructural process, but also as a human-centered organizational transition. Training initiatives, accessible support systems, and user-oriented digital solutions may contribute significantly to improving employee engagement with technological systems. At the same time, organizations may benefit from adopting differentiated support strategies capable of addressing the diverse needs and adaptation patterns associated with heterogeneous workforces.

Overall, the article contributes to the growing body of research examining digital transformation in traditional work environments by emphasizing the interaction between organizational context, employee adaptability, and support mechanisms. The results indicate that the successful integration of digital tools depends not only on technological implementation itself, but also on the extent to which organizations create supportive conditions that facilitate long-term employee engagement with digital systems.

Acknowledgements: During the preparation of this work, the author(s) utilized ChatGPT 4 to enhance readability and language clarity. Following the use of this tool, the author(s) meticulously reviewed and revised the content as necessary and assume(s) full responsibility for the final content of the publication.

References

- Azhari, M. H., Soelistya, D., & Desembrianita, E. (2024). The influence of organizational culture and job training on employee performance through job satisfaction as a mediating variable. *MANAZHIM*, 6(1), 290–309.
- Barreda Gutiérrez, M., Cantarero-Prieto, D., & Pascual Sáez, M. (2024). Age, Technology, and the Digital Divide: Are They Directly Related to Mental Health Problems? *Healthcare*, 12(23), 2454. <https://doi.org/10.3390/healthcare12232454>

- Bueno, L. A., Sigahi, T. F., Rampasso, I. S., Leal Filho, W., & Anholon, R. (2024). Impacts of digitization on operational efficiency in the banking sector: Thematic analysis and research agenda proposal. *International Journal of Information Management Data Insights*, 4(1), 100230
- Danilyan, O., & Dzeban, O. (2024, February 16–18). Security in the context of digitization and virtualization [Paper presentation]. *15th International Scientific and Practical Conference «Scientific Research in XXI Century»*, Ottawa, ON, Canada
- Davis, F.D. (1989) Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology, *MIS Quarterly*, 13 (3), 319.
- Dearing, J.W., Cox, J.G. (2018) Diffusion of Innovations Theory, Principles, and Practice. *Health Affairs*, 37(2), pp.183–190, <https://doi.org/10.1377/hlthaff.2017.1104>.
- Gregory, K. (2011). The importance of employee satisfaction. *The Journal of the Division of Business & Information Management*, 5, 29–37.
- Gheorghica D., Croitoru V. (2010) Firewall Policy Management Using Secure Web System, *U.P.B. Sci. Bull., Series C*, Vol. 72, Iss. 3, 2010 ISSN 1454-234x
- Hammerschmid, G., Palaric, E., Rackwitz, M., & Wegrich, K. (2024). A shift in paradigm? Collaborative public administration in the context of national digitalization strategies. *Governance*, 37(2), 411–430
- Haug, N., Dan, S., & Mergel, I. (2024). Digitally-induced change in the public sector: A systematic review and research agenda. *Public Management Review*, 26(7), 1963–1987
- Handrich M., Otterbach M., (2024) Digital Employee Training With Digital Adoption Platforms Boost Learning and Knowledge Management of Corporate IT Systems, *International Journal of Knowledge Management*, Volume 20, Issue 1, ISSN 1548-0666, <https://doi.org/10.4018/IJKM.358005>
- Lei, X., Shen, Z. Y., Štreimikiene, D., Baležentis, T., Wang, G., & Mu, Y. (2024). Digitalization and sustainable development: Evidence from OECD countries. *Applied Energy*, 357, 122480.
- Marler J. H. , Liang X., Dulebohn J. H., (2006) Training and effective employee information technology use. *Journal of Management*, 32 (5), pp. 721-743, 10.1177/0149206306292388
- Marwell, G., Oliver, P. (1993) *The Critical Mass in Collective Action: A Micro-social Theory*, Cambridge University Press, Cambridge.
- Mitroi C., Stroescu D. (2012) Optimization Of Congestion Management Mechanisms Within Customer Equipment Node In An Intranet Network, *U.P.B. Sci. Bull., Series C*, Vol. 74, Iss. 4, 2012 ISSN 1454-234x
- Nusantara, A. H. S., Kartaatmadja, A. T., Umam, I. K., & Saedudin, R. R. (2024). Digitizing business processes to improve operational efficiency in companies. *JURNAL SITEKNIK: Sistem Informasi, Teknik dan Teknologi Terapan*, 1(1), 17–23.
- Najmudin, M., Santoso, I. B., Laras, T., & Helmi, S. (2024). The Influence of Work Environment and Transformation-al Leadership on Job Satisfaction and its Impacts on Employee Performance. *Migration Letters*, 21(3), 1083–1091.
- Priyanjani, A. R., Fadillah, F., Ghalib, A., Sutrisno, E., & Permana, D. Y. (2024). Legal protection for personal data in the world of work in the era of digitalization of technology and information. *Journal of Social Science (JoSS)*, 3(6), 1405–1411.
- Ramsetty, A.; Adams, C. (2020) Impact of the digital divide in the age of COVID-19. *J. Am. Med. Inform. Assoc.*, 27, 1147–1148

- Rogers, E.M. (1983) Diffusion on innovations [Online] New York: The Free Press, Available at: <https://teddykw2.files.wordpress.com/2012/07/everett-m-rogers-diffusion-of-innovations.pdf>
- Rogers, E. M. (2003) Diffusion of innovations 5th ed., New York (NY), FreePress
- Soetjipto, N., Priyohadi, N., Sulastri, S., & Riswanto, A. (2021). The effect of company climate, organization citizenship behavior, and transformational leadership on work morale through employee job satisfaction. *Management Science Letters*, 11(4), 1197–1204
- Song, Y.; Qian, C.; Pickard, S. (2021) Age-related digital divide during the COVID-19 pandemic in China. *Int. J. Environ. Res. Public Health*, 18, 11285
- Syarif, D. S., Soelistya, D., & Suyoto, S. (2024). Strategy for Reducing Employee Turnover Intention: The Influence of Organizational Culture and Work Environment as Mediated by Job Satisfaction. *MANAZHIM*, 6(1), 224–245.
- Venkatesh, V., Davis, F.D. (2020) A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies, *Management Science*, 46(2), pp.186–204.
- Venkatesh, V., Morris, M., Davis, G., Davis, F. (2003) User Acceptance of Information Technology: Toward a Unified View, *MIS Quarterly*.
- Venkatesh, V. and Bala, H. (2008) “Technology Acceptance Model 3 and a Research Agenda on Interventions,” *Decision Sciences* (39:2), 273-315. <https://doi.org/10.1111/j.1540-5915.2008.00192.x>
- (PDF) Technology Acceptance Model 3 and a Research Agenda on Interventions. Available from: https://www.researchgate.net/publication/247644487_Technology_Acceptance_Model_3_and_a_Research_Agenda_on_Interventions [accessed Feb 26 2026].
- Walker, K. (2024). Employee feedback: How to provide feedback and recognition regularly. *Strategic HR Review*, 23(2), 46–50
- Weritz, P., Matute, J., Braojos, J., & Kane, G. C. (2022, December 9–14). How Much Digital is Too Much? A Study on Employees’ Hybrid Workplace Preferences. *43rd International Conference on Information Systems: Digitization for the Next Generation*, ICIS, Copenhagen, Denmark.