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An Advanced Framework for Technology Adoption that Supports Employee Readiness in Modern Organizations

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Abstract

As organizations embrace digital transformation, successful technology adoption increasingly depends on employee readiness, defined by skills, adaptability, and psychological acceptance of technological change. This paper presents an advanced framework for technology adoption that systematically integrates employee readiness assessment and development into the organizational change process. The framework responds to the growing need for a human-centered approach that balances technological advancement with workforce empowerment, ensuring that employees are not passive recipients of innovation but active enablers of transformation. Grounded in the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) theory, and the Unified Theory of Acceptance and Use of Technology (UTAUT), the proposed framework introduces four interlinked layers: strategic alignment, readiness assessment, capability development, and adaptive reinforcement. The strategic alignment layer ensures that technology initiatives align with organizational goals and employee values. The readiness assessment layer employs diagnostic tools to measure cognitive, emotional, and behavioral preparedness across workforce segments. The capability development layer provides targeted interventions such as digital upskilling, change communication, and peer mentoring to build confidence and competence. Finally, the adaptive reinforcement layer focuses on sustaining adoption through feedback systems, leadership engagement, and continuous learning loops. The framework employs a cyclical, data-driven model that leverages analytics and employee feedback to predict adoption barriers and guide decision-making. It also incorporates behavioral insights to promote positive attitudes toward technology use while mitigating resistance and burnout. By emphasizing inclusivity and psychological safety, the model fosters a supportive environment where employees can adapt to new technologies without fear of obsolescence. This paper contributes to organizational behavior and change management literature by reframing technology adoption as a socio-technical process rather than a purely technical implementation. The framework provides actionable pathways for executives, HR leaders, and digital transformation specialists seeking to enhance workforce adaptability, sustain innovation momentum, and achieve technology-driven productivity gains.

Keywords: Technology Adoption, Employee Readiness, Digital Transformation, Organizational Change, Capability Development, Adaptive Reinforcement, Behavioral Readiness, Continuous Learning

1. Introduction

Digital transformation has become a defining feature of modern organizations, reshaping how work is designed, delivered, and experienced across virtually every sector. Advances in cloud computing, artificial intelligence, automation, analytics, mobile platforms, and collaboration tools have shifted technology from being a back-office enabler to a core driver of strategy and competitiveness. Organizations now depend on integrated digital systems for customer engagement, supply chain visibility, regulatory compliance, remote and hybrid work, and data-informed decision-making. Yet, despite substantial investments in new technologies, many initiatives underperform or fail outright (Ajayi *et al*., 2023, Essien *et al*., 2023; Oladimeji *et al*., 2023; Rukh, Oziri & Seyi-Lande, 2023). Projects that appear robust on paper often encounter delays, underutilization, workarounds, or quiet abandonment once deployed. This gap between technological potential and realized value underscores a recurring lesson of digital transformation: technology adoption is as much a human challenge as it is a technical one.

At the center of this human dimension lies employee readiness,the extent to which individuals possess the skills, confidence, understanding, and motivation required to engage with new technologies effectively. Employee readiness encompasses not only digital literacy and functional competence, but also psychological and behavioral factors such as openness to change, perceived usefulness, trust in systems, and resilience in the face of disruption. When readiness is high, technology adoption can catalyze innovation, collaboration, and performance improvements. When readiness is low, even well-designed systems become sources of frustration, resistance, and operational risk (Asata, Nyangoma & Okolo, 2020; Bukhari *et al*., 2020; Essien *et al*., 2020; Akintayo *et al*., 2024). Employees may cling to legacy processes, develop shadow systems, or disengage from transformation efforts, eroding return on investment and undermining strategic objectives. In this sense, employee readiness is not a peripheral concern; it is a decisive factor that determines whether technology initiatives translate into meaningful and sustainable organizational outcomes.

Despite its importance, employee readiness is often treated as an afterthought in technology adoption programs. Traditional implementation approaches focus heavily on system selection, configuration, budgets, timelines, and vendor contracts, while assuming that training sessions and user manuals will be sufficient to bring employees along. Such approaches overlook significant variability in workforce capabilities, change fatigue, cultural norms, and perceptions of fairness or job security (Abass, Balogun & Didi, 2020; Amatare & Ojo, 2020; Imediegwu & Elebe, 2020). They also neglect the reality that technology adoption unfolds as a process, not an event: employees must continuously adapt as systems evolve, new features are introduced, and workflows are reconfigured. An advanced approach to technology adoption must therefore move beyond simple “roll-out and train” models to embrace readiness as a central design parameter,one that is assessed, developed, and monitored throughout the lifecycle of digital transformation (Frempong *et al*., 2024; Zhuwankinyu *et al*., 2024; Eboseremen *et al*., 2024; Taiwo *et al*., 2024).

This paper aims to propose an advanced framework for technology adoption that places employee readiness at the core of the implementation strategy. The framework seeks to integrate strategic, organizational, and individual perspectives, offering a structured approach to designing adoption processes that are both technologically robust and human-centered. Rather than treating readiness as a fixed precondition, the framework conceptualizes it as a dynamic, developable state that can be shaped through targeted interventions (Frempong *et al*., 2024; Moyo *et al*., 2024; Ezeh *et al*., 2024; Obuse *et al*., 2024). It weaves together elements such as strategic alignment, readiness assessment, capability development, communication and engagement, psychological safety, and feedback-driven reinforcement into a coherent model that organizations can adapt to their unique contexts (Adesanya *et al*., 2020; Oziri, Seyi-Lande & Arowogbadamu, 2020).

In terms of scope, the proposed framework is intended for modern organizations operating in environments characterized by rapid change, complex technology stacks, and diverse workforces. It applies to a wide range of digital initiatives, from enterprise-wide platformssuch as ERP, CRM, HRIS, and data analytics systemsto more localized tools like workflow applications, collaboration suites, and specialized automation solutions. The framework is not limited to any single industry; rather, it is designed to be flexible enough for adaptation by public, private, and non-profit organizations. It focuses on the intersection of technology, people, and processes, emphasizing how leadership, HR, change management teams, and line managers can coordinate their efforts to build and sustain readiness across different units and job roles (Asata, Nyangoma & Okolo, 2021; Essien *et al*., 2021; Imediegwu & Elebe, 2021).

The significance of this advanced technology adoption framework is threefold. First, it responds to a practical gap by offering organizations a systematic way to diagnose and address readiness-related risks before they derail implementation. By making readiness visible and measurablerather than intangible and assumed,the framework enables proactive planning and resource allocation. Second, it contributes to theory by integrating insights from technology adoption models, organizational change, and human resource development into a unified conceptual structure that foregrounds the employee perspective (Sakyi *et al*., 2024; Kuponiyi *et al*., 2024; Nnabueze *et al*., 2024; Ogunsola *et al*., 2024). It reframes adoption as a socio-technical process in which beliefs, emotions, and social dynamics are as consequential as system functionalities or project plans (Asata, Nyangoma & Okolo, 2022; Bukhari *et al*., 2022; Essien *et al*., 2022). Third, it provides a foundation for continuous improvement. Through its emphasis on feedback loops, learning mechanisms, and iterative adjustment, the framework helps organizations move from one-off implementation projects toward a more mature, capability-based approach to digital transformation.

Ultimately, this paper argues that sustainable technology adoption in modern organizations cannot be achieved by focusing solely on systems, timelines, or budgets. It requires deliberate, ongoing work to understand and support the people who are expected to live with and leverage the new technologies every day. By articulating an advanced framework that supports employee readiness, the paper aims to equip leaders, practitioners, and researchers with a more comprehensive lens for planning, executing, and evaluating digital initiativesone that increases the likelihood that technological investments will translate into genuine improvements in performance, engagement, and organizational resilience (Adepeju Nafisat, 2023, Asata, Nyangoma & Okolo, 2023, Osuji, Okafor & Dako, 2023).

2.1 Methodology

The study adopts a conceptual, design-oriented methodology that synthesizes insights from advanced analytics, technology adoption, human resources, and organisational change literature to develop an integrated framework for technology adoption that supports employee readiness in modern organisations. It begins with a problem definition phase that clarifies the persistent gap between technology deployment and actual employee readiness, drawing on evidence of adoption failures, skills mismatches, and resistance to change reported in prior work on SME performance, digital transformation, and workforce governance. This phase delineates the organisational contexts of interest (e.g., SMEs, large enterprises, regulated sectors) and specifies the core outcomes the framework

must support, including adoption effectiveness, behavioural readiness, and sustainable performance improvements.

The next phase involves systematic mapping of the supplied literature into thematic clusters encompassing: technology and digital solution adoption strategies (e.g., IT adoption in SMEs, digital twins, analytics enablement, BI maturity); predictive and segmentation-based analytics for behaviour change and customer engagement (e.g., churn models, personalization, Net Promoter frameworks, geo-marketing and usage/retention models); strategic HR and talent management perspectives (e.g., social interaction and helping behaviour, hybrid workforce governance, AI in HR, ethical and readiness-focused HR analytics); and organisational governance, risk, and compliance models that shape digital resilience and change readiness. Within each cluster, key constructs such as technological complexity, perceived usefulness, leadership support, data culture, learning architectures, psychological safety, and readiness dimensions (cognitive, affective, behavioural, and contextual) are extracted through interpretive content analysis.

A synthesis phase then integrates these constructs into a multi-layer architecture for technology adoption and employee readiness. The conceptual model is developed iteratively, using pattern matching and logical inference to define interdependent layers: strategic and governance layer (alignment of technology decisions with organisational strategy and regulatory context); analytics and insight layer (segmentation of employees by readiness profiles, predictive identification of adoption risks, feedback from engagement metrics); capability and support layer (training, coaching, communities of practice, self-service BI enablement, extended reality learning, and peer-led reinforcement); and communication and experience design layer (storytelling, change narratives, targeted messaging, and continuous feedback loops). Linkages are specified between layers to show how leadership and governance choices condition analytics priorities, which in turn inform differentiated learning pathways and communication strategies that build readiness over time.

To strengthen conceptual robustness, the emergent framework is stress-tested against diverse scenarios reported in the literature, including digital health programmes, fintech and telecom analytics, construction and infrastructure digitalisation, and public-sector digital resilience. This comparative reasoning ensures that the framework is sufficiently general to cover multiple sectors while preserving sensitivity to highly regulated and high-risk environments. The final phase translates the conceptual architecture into a set of propositions and indicative metrics that can guide future empirical validation. These propositions specify expected relationships between readiness constructs, technology adoption outcomes, and organisational performance indicators, and suggest mixed-methods research designscombining surveys, behavioural analytics, and longitudinal case studiesfor subsequent testing. This methodology thus delivers a rigorous, literature-grounded, and practice-oriented framework that organisations can use to systematically design technology adoption programmes that build and sustain employee readiness.

Fig 1: Flowchart of the study methodology

2.2 Theoretical and Conceptual Background

Technology adoption in modern organizations has been extensively studied through several influential theoretical lenses, each offering insights into how individuals and groups engage with new systems. Three of the most prominent are the Technology Acceptance Model (TAM), Diffusion of Innovation (DOI) theory, and the Unified Theory of Acceptance and Use of Technology (UTAUT). TAM, originally developed by Davis, posits that perceived usefulness and perceived ease of use are the primary determinants of an individual's intention to use a new technology, which in turn predicts actual use (Akinrinoye *et al*., 2015; Bukhari *et al*., 2019; Erigha *et al*., 2019; Kuponiyi *et al*., 2024). It emphasizes cognitive evaluationsof whether a system will enhance job performance and whether it is user-friendlyas key drivers of acceptance. Diffusion of Innovation theory, introduced by Rogers, broadens the lens to a social and temporal perspective, examining how innovations spread through populations over time. DOI identifies characteristics such as relative advantage, compatibility, complexity, trialability, and observability as influential in adoption decisions, and categorizes adopters into segments like innovators, early adopters, and laggards. UTAUT synthesizes elements from TAM, DOI, and other models, proposing that performance expectancy, effort expectancy, social influence, and facilitating conditions shape behavioral intention and use, moderated by factors such as age, gender, experience, and voluntariness (Arowogbadamu, Oziri & Seyi-Lande, 2023; Lawal *et al*., 2023; Olinmah *et al*., 2023; Uddoh *et al*., 2023).

These models have significantly advanced understanding of why people accept or reject new technologies, yet they tend to foreground cognitive appraisals of the technology itself rather than the broader construct of employee readiness. Employee readiness is a more holistic concept that refers to the degree to which individuals are psychologically, cognitively, and behaviorally prepared to engage with organizational change,in this case, technology adoption. Readiness encompasses not only beliefs about the technology but also beliefs about oneself, the organization, and the change process. It can be understood through three interrelated dimensions: cognitive, emotional, and behavioral (Abdulsalam, Farounbi & Ibrahim, 2021; Essien *et al*., 2021; Uddoh *et al*., 2021).

The cognitive dimension of readiness involves knowledge, beliefs, and expectations. It includes employees' understanding of what the new technology does, why it is being implemented, how it will affect their tasks, and what is required of them. Cognitive readiness is reflected in perceptions such as "I understand the rationale for this system," "I know how it will change my workflow," and "I believe I can learn to use it effectively." It is closely linked to constructs from TAM and UTAUT, such as perceived usefulness and self-efficacy, but also extends to broader beliefs about the organization's competence in managing change and the credibility of leaders promoting the technology (Ajayi, 2022; Bukhari *et al*., 2022; Ogedengbe *et al*., 2022; Rukh, Seyi-Lande & Oziri, 2022).

The emotional dimension refers to feelings and affective responses triggered by the anticipated or actual use of new technology. These responses can range from excitement, curiosity, and optimism to anxiety, frustration, and fear. Emotional readiness involves the extent to which employees feel psychologically safe, supported, and resilient in the face of digital disruption. For example, an employee may cognitively recognize that a new system is useful but still feel threatened by the possibility of job redesign, increased monitoring, or skill obsolescence. Emotional reactions are influenced by past change experiences, trust in leadership, perceived fairness, and the broader organizational climate. This dimension is often underrepresented in traditional technology adoption models, which largely assume rational evaluation rather than emotional complexity (Adesanya *et al*., 2020; Seyi-Lande, Arowogbadamu & Oziri, 2020; Kuponiyi *et al*., 2024).

The behavioral dimension of readiness captures observable intentions and actions that reflect preparation for adoption. It includes willingness to attend training, experiment with new features, give feedback, collaborate with peers, and adjust routines. Behavioral readiness is not simply actual usage; it is the proactive engagement with the adoption process, choosing to explore, practice, and integrate the technology into daily work (Asata, Nyangoma & Okolo, 2023; Oyasiji *et al*., 2023; Uddoh *et al*., 2023; Kuponiyi *et al*., 2024). It reveals whether employees are prepared to invest effort and adapt behaviors, even when the technology is initially unfamiliar or imperfect. Behavioral readiness can be shaped by incentives, role modeling, peer norms, and the availability of time and resources for learning.Figure 2 shows the Framework of Organizational Readiness in IS adoption presented by Aziz & Yusof (2018).

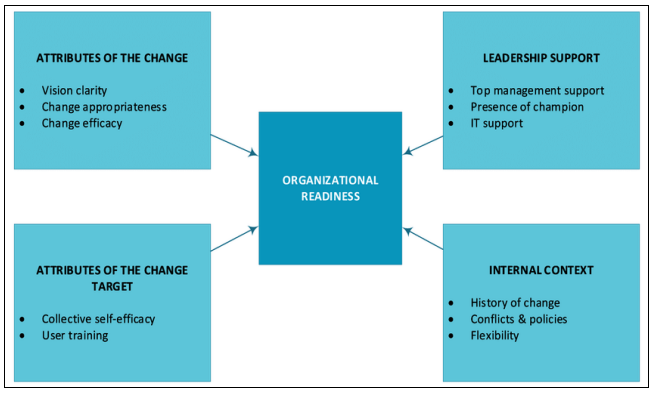

Fig 2: Framework of Organizational Readiness in IS adoption (Aziz & Yusof, 2018)

Existing technology adoption models only partially address these readiness dimensions. TAM and UTAUT predominantly emphasize cognitive appraisals of the technology and, to a lesser degree, social influence and facilitating conditions. They were designed to predict intention and use at a point in time, not to describe how readiness develops dynamically through organizational interventions and learning cycles. Similarly, DOI provides valuable insight into how innovations spread across populations but focuses more on characteristics of the innovation and social networks than on the inner readiness states of individual employees. As a result, these models often treat users as relatively passive evaluators of technology rather than as active agents whose readiness can be cultivated (Asata, Nyangoma & Okolo, 2020; Essien *et al*., 2020; Imediegwu & Elebe, 2020).

A key gap in these traditional models is the underemphasis on emotional and psychological safety. For many employees, technology adoption evokes concerns about workload, surveillance, autonomy, and job security. If these fears are not acknowledged and managed, they can undermine even the most well-designed systems. Yet most adoption theories assume that once usefulness and ease of use are demonstrated, acceptance will follow. They pay less attention to how stress, burnout, change fatigue, or prior negative experiences with technology shape readiness. Consequently, organizations relying solely on these models may underestimate the importance of addressing emotional barriers and building supportive environments that normalize learning and experimentation (Akindemowo *et al*., 2022; Dako, Okafor & Osuji, 2021; Imediegwu & Elebe, 2022).

Another gap lies in the limited treatment of organizational context and continuous readiness. Technology adoption is often conceptualized as an eventlaunching a new systemrather than as an ongoing process in which systems evolve, updates are rolled out, and new tools are layered on top of existing ones. In reality, employee readiness must be sustained over time as technologies and work practices continue to change. Traditional models provide little guidance on how to maintain readiness through cycles of iteration, how to respond to evolving user needs, or how to adapt adoption strategies based on feedback and performance data. They typically do not specify how leadership behaviors, culture, HR practices, or learning ecosystems contribute to readiness beyond providing "facilitating conditions (Ajakaye *et al*., 2023; Essien *et al*., 2023; Obuse *et al*., 2024; Oladimeji *et al*., 2023)."

Furthermore, existing models tend to focus on individual attitudes and intentions but provide limited direction on how organizations can actively shape those attitudes through structured interventions. They describe predictors of adoption but do not offer a comprehensive framework for readiness assessment, capability development, communication strategies, and reinforcement mechanisms (Abdulsalam, Farounbi & Ibrahim, 2021; Asata, Nyangoma & Okolo, 2021; Uddoh *et al*., 2021). As a result, practitioners often fall back on narrow approaches such as one-off training sessions, generic change communications, or simple incentive schemes, assuming that these will move the needle on acceptance. However, such interventions may not address deeper readiness issues, such as low confidence, mistrust, or misalignment between technology features and

job realities.Figure 3 shows the Theoretical Framework of ICT Adoption in SMEs presented by Shahadat *et al*., 2023.

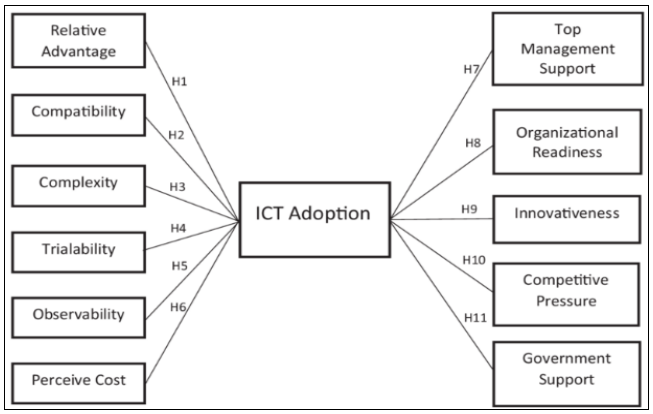

Fig 3: Theoretical Framework of ICT Adoption in SMEs (Shahadat *et al*., 2023)

There is also a methodological gap in how readiness is measured. Many organizations rely on usage statistics or post-implementation satisfaction surveys as proxies for successful adoption. These metrics provide limited insight into underlying readiness states and may mask problems. For example, high usage may reflect compulsion rather than genuine engagement, while low usage may stem from infrastructure issues rather than resistance. A readiness-oriented approach would call for more nuanced diagnostics that capture cognitive understanding, emotional climate, and behavioral engagement before, during, and after implementation (Ajayi *et al*., 2023; Bukhari *et al*., 2023; Imediegwu & Elebe, 2023; Oziri, Arowogbadamu & Seyi-Lande, 2023).

These gaps collectively highlight the need for an advanced technology adoption framework that reframes adoption as a socio-technical process centered on employee readiness. Such a framework would still draw on insights from TAM, DOI, and UTAUT,particularly around perceived usefulness, effort expectancy, and social influence,but would extend them by situating these constructs within a broader readiness paradigm. It would recognize that readiness is not merely an antecedent to adoption but a dynamic state shaped by leadership, culture, communication, and learning systems. Rather than assuming readiness, the framework would treat it as an explicit design target: something to be assessed, developed, and monitored systematically (Bukhari *et al*., 2022; Eboseremen *et al*., 2022; Imediegwu & Elebe, 2022).

In this perspective, technology adoption becomes a partnership between systems and people. Organizations do not simply deploy tools and hope for acceptance; they intentionally build the cognitive, emotional, and behavioral foundations that enable employees to engage with those tools effectively and sustainably. Theoretical and conceptual work that integrates adoption models with concepts from organizational change, psychology, and human resource development is therefore essential. It can provide the foundation for a more human-centered, readiness-focused approach to digital transformation,one that better reflects the lived realities of employees in modern organizations and increases the likelihood that technological investments will translate into meaningful improvements in performance and well-being (Adesanya, Akinola & Oyeniyi, 2022; Bayeroju, Sanusi & Sikhakhane, 2022; Bukhari *et al*., 2022).

2.3 Problem Statement and Study Objectives

Modern organizations continue to invest heavily in digital tools, enterprise platforms, and automation, yet the realized benefits often fall short of expectations. New systems go live with great fanfare but soon encounter familiar obstacles: employees resist changes to established routines, skill gaps slow down adoption, burnout rises as workloads and cognitive demands increase, and utilization levels remain far below the capabilities of the technologies deployed. These challenges are not marginal; they sit at the heart of why many digital transformation initiatives fail to deliver promised gains in productivity, innovation, and employee experience (Ajayi *et al*., 2018; Bukhari *et al*., 2018; Essien *et al*., 2019). The recurring nature of these problems points to a deeper issue: technology adoption is typically designed around systems, timelines, and budgets, while the readiness and well-being of the people expected to use those systems receive insufficient, fragmented attention.

Resistance to new technologies often manifests as skepticism, avoidance, or quiet non-compliance. Employees may question the relevance of a new system, doubt its reliability, or fear that it will render their skills obsolete. Even when they do not openly oppose change, they may cling to legacy tools, maintain parallel spreadsheets, or revert to old processes whenever possible. Importantly, this resistance is rarely irrational; it often reflects unaddressed concerns about workload, fairness, surveillance, or trust in leadership. Skill gaps further complicate adoption (Sakyi *et al*., 2024; Yeboah *et al*., 2024; Kuponiyi *et al*., 2024; Nnabueze *et al*., 2024). Many workforces are heterogeneous in terms of digital literacy, learning preferences, and prior exposure to technology. A one-size-fits-all training program leaves some employees overwhelmed and others under-challenged (Akinrinoye *et al*. 2020, Essien *et al*. 2020, Imediegwu & Elebe 2020). Those who struggle can feel inadequate or exposed, leading to disengagement or reliance on a small group of "tech-savvy" colleagues, which creates new bottlenecks and dependencies.

Burnout and change fatigue are increasingly visible consequences of poorly managed technology adoption. In fast-moving organizations, employees may experience a near-constant stream of new tools, updates, and process changes layered on top of existing responsibilities. Without careful pacing, workload redistribution, and psychological support, technology projects can amplify stress rather than alleviate it. Employees may feel they are being asked to "do more with more," constantly learning new systems while still being held to pre-transformation performance standards (Asata, Nyangoma & Okolo, 2023; Bayeroju, Sanusi & Nwokediegwu, 2023; Oziri, Arowogbadamu & Seyi-Lande, 2023). Over time, this can erode morale, reduce learning capacity, and trigger cynical attitudes toward future initiatives. Low utilization of new technologies is often the result of these dynamics. Systems may technically be in place, but employees use only basic functions, bypass key features, or engage superficially with tools meant to enable deeper collaboration or analytics. Organizations then find themselves with expensive, underused platforms, patchy data quality, and only incremental improvements over previous ways of working (Akinrinoye *et al*., 2021; Didi, Abass & Balogun, 2021; Umoren, *et al*., 2021).

Against this backdrop, the central problem this study addresses is the absence of an integrated, readiness-centered framework for technology adoption that systematically takes

into account resistance, skill gaps, burnout risks, and utilization patterns as interconnected phenomena rather than isolated "people issues." Existing approaches either focus heavily on technical implementation and project management, leaving human factors to generic change management activities, or rely on narrow acceptance models that do not fully capture the dynamic, multi-dimensional nature of readiness in contemporary workplaces. As technologies become more complex and pervasive, and as hybrid work, continuous deployment, and cross-functional collaboration become the norm, the limitations of these fragmented approaches become increasingly evident (Akinrinoye, *et al*. 2020, Bukhari, *et al*., 2020, Elebe & Imediegwu, 2020).

To confront this problem, the development of an advanced framework for technology adoption is guided by several core questions. The first is: how can employee readiness be conceptualized and operationalized in ways that capture cognitive, emotional, and behavioral dimensions while remaining practical for organizational use? This question seeks to move beyond simplistic notions of "resistance" to understand the nuanced states of understanding, confidence, motivation, and engagement that shape adoption trajectories (Ajayi, *et al*., 2019, Bukhari, *et al*., 2019, Oguntegbe, Farounbi & Okafor, 2019). A second question asks: what organizational mechanisms such as leadership behaviors, communication strategies, learning ecosystems, and workload designmost effectively build and sustain readiness before, during, and after technology implementation? This focuses attention on levers within the control of organizations that can be deliberately designed rather than assumed.

A third guiding question is: how can technology adoption processes be structured to minimize burnout and change fatigue while still achieving timely implementation and continuous improvement? This involves exploring how pacing, sequencing, and support structures influence both psychological well-being and adoption outcomes. A fourth question considers: in what ways can organizations use data and feedback mechanisms to monitor readiness, detect emerging risks (such as pockets of resistance or overload), and adapt adoption strategies in real time? This recognizes that readiness is dynamic and requires ongoing sensing and response, not a one-off assessment (Asata, Nyangoma & Okolo, 2021, Bukhari, *et al*., 2021, Osuji, Okafor & Dako, 2023). Finally, the framework must grapple with the question: how can these concepts be made sufficiently flexible to be applied across diverse contextsdifferent industries, organizational sizes, and workforce compositionswithout losing conceptual coherence?

From these questions emerge specific study objectives. One objective is to develop a comprehensive conceptual model that situates employee readiness as the central mediating construct between technology introduction and organizational outcomes. This model will map how contextual factors (such as leadership style, culture, and prior change history), intervention strategies (such as training, communication, and participatory design), and individual differences (such as digital literacy and change orientation) interact to shape readiness and, in turn, influence resistance, skill development, burnout risk, and utilization patterns (Ajayi, *et al*., 2021, Bukhari, *et al*., 2021, Elebe & Imediegwu, 2021, Sanusi, Bayeroju & Nwokediegwu, 2021). A second objective is to translate this conceptual model into a practical framework that organizations can use to design, implement, and evaluate technology adoption initiatives. This includes articulating phases, activities, and decision points that explicitly incorporate readiness assessment and development, rather than relegating them to peripheral or informal practices.

A third objective is to articulate a set of readiness-focused tools and metrics that can be used by practitioners to diagnose and monitor adoption processes. These might include surveys, focus group guides, behavioral indicators, and analytics dashboards that provide insight into employees' understanding, sentiment, engagement, and usage behavior. The aim is to move beyond coarse measures such as login counts or training completion rates toward more meaningful indicators of whether employees feel capable, supported, and motivated to integrate new technologies into their work (Asata, Nyangoma & Okolo, 2023; Bayeroju, Sanusi & Nwokediegwu, 2023; Rukh, Seyi-Lande & Oziri, 2023). A fourth objective is to guide how organizations can embed readiness considerations into broader governance and HR systems,for example, integrating readiness into performance management, workload planning, leadership development, and well-being programs.

The expected contributions of this framework to organizational practice are substantial. Practically, it offers a structured way for leaders, HR professionals, and change agents to anticipate and mitigate human risks that commonly derail technology projects. By making readiness an explicit focus, organizations can allocate resources more effectively,targeting intensive support where skill gaps and emotional barriers are greatest, while empowering more advanced users to innovate and mentor others. The framework can help reduce costly cycles of rework, resistance, and underutilization, improving return on technology investments and supporting healthier, more sustainable patterns of change. It also encourages organizations to treat technology adoption as an ongoing capability rather than a series of discrete projects, fostering a culture of continuous learning and adaptation (Ajakaye *et al*., 2023; Bukhari, *et al*., 2023, Oladimeji, *et al*., 2023, Sanusi, Bayeroju & Nwokediegwu, 2023).

For scholarship, the framework contributes by integrating insights from technology acceptance theories, organizational change, occupational health, and human resource development into a unified perspective on readiness-centric adoption. It pushes beyond static, attitudinal models of acceptance to conceptualize adoption as a dynamic process shaped by interactions between individuals and organizational systems over time (Filani, Lawal, *et al*., 2021; Onyelucheya *et al*., 2021; Uddoh *et al*., 2021). The model invites empirical research that examines not just whether technologies are used, but how readiness evolves, how interventions influence that evolution, and how readiness mediates the relationship between technological change and outcomes such as performance, innovation, and well-being (Bukhari *et al*., 2022, Dako, Okafor & Osuji, 2022, Eboseremen, *et al*., 2022). By foregrounding issues of burnout and psychological safety alongside skill and attitude, it opens new avenues for interdisciplinary research at the intersection of digital transformation and employee health.

In sum, the problem this study addresses is not that organizations lack technology or change management

methodologies, but that they lack a comprehensive, human-centered framework that treats employee readiness as the central, actionable hinge between technology and value creation. The objectives and contributions outlined aim to close this gap by providing both a conceptual foundation and a practical roadmap for technology adoption that honors the realities of modern workcomplex, fast-moving, and deeply dependent on the readiness and resilience of the people at its core (Ajayi, *et al*., 2019, Bayeroju, *et al*., 2019, Sanusi, *et al*., 2019).

2.4 Conceptual Foundations of the Technology Adoption-Readiness Framework

The conceptual foundations of the Technology Adoption–Readiness Framework are built upon the recognition that digital transformation succeeds not merely through technological capability but through human adaptability, learning, and alignment. The framework posits that employee readiness,comprising cognitive, emotional, and behavioral preparedness, is the decisive factor that determines whether technology becomes an enabler of performance or a source of disruption. It integrates four interdependent constructs:strategic alignment, readiness assessment, capability development, and adaptive reinforcementinto a holistic architecture for understanding and managing the human dimensions of digital adoption (Ajayi *et al*., 2022; Arowogbadamu, Oziri & Seyi-Lande, 2022; Bukhari *et al*., 2022). Together, these constructs establish a continuous cycle of planning, diagnosis, development, and adaptation that aligns technological change with workforce capability and organizational culture.

The first construct, strategic alignment, anchors the framework by ensuring that technology initiatives are tightly coupled with enterprise strategy and workforce realities. Many organizations adopt technologies reactively,following market trends or vendor pitcheswithout clearly linking them to strategic priorities or performance outcomes. The framework assumes that readiness can only be meaningfully cultivated when employees understand the "why" of technology adoption and see how it connects to organizational vision and individual contribution. Strategic alignment involves aligning technological objectives with business goals, leadership narratives, and role expectations (Adesanya, Akinola & Oyeniyi, 2021; Bukhari *et al*., 2021; Farounbi *et al*., 2021; Uddoh *et al*., 2021). This alignment helps avoid cognitive dissonance, where employees are asked to adopt systems that seem disconnected from their daily realities. By embedding strategic clarity into communication and planning processes, leadership creates the conditions for meaningful engagement. Moreover, strategic alignment ensures that readiness-building interventions, such as training and communication, are not generic but targeted toward the strategic capabilities the organization seeks to develop,whether that is operational efficiency, innovation, customer responsiveness, or sustainability (Farounbi, Ibrahim & Abdulsalam, 2022; Ibrahim, Oshomegie & Farounbi, 2022).

The second construct, readiness assessment, represents the diagnostic core of the framework. Traditional technology projects rarely begin with a systematic evaluation of how prepared employees are to engage with the change. The readiness assessment component introduces structured mechanisms to measure the cognitive (knowledge and understanding), emotional (confidence and motivation), and behavioral (willingness and proactive engagement) dimensions of readiness (Asata, Nyangoma & Okolo, 2020; Essien *et al*., 2020; Elebe & Imediegwu, 2020). It draws upon both qualitative and quantitative methods,surveys, interviews, focus groups, sentiment analysis, and usage datato identify readiness levels and their distribution across the organization. Importantly, the assessment is not treated as a one-off activity but as a dynamic process that occurs throughout the technology adoption lifecycle. Before implementation, it helps identify potential barriers and tailor interventions. During rollout, it monitors engagement and signals where additional support is needed. After deployment, it evaluates how readiness translates into sustained usage and performance. The readiness assessment thus becomes both a feedback mechanism and a decision-support tool, guiding leadership and project teams in adapting their approaches based on real-time human data rather than assumptions (Didi, Abass & Balogun, 2022; Evans-Uzosike *et al*., 2022; Umoren *et al*., 2022).

The third construct, capability development, transforms readiness insights into targeted interventions that build both technical and adaptive competence. In this framework, capability development extends beyond conventional training that focuses solely on system navigation or task procedures. It encompasses a broader developmental agenda that includes digital literacy, change resilience, collaborative problem-solving, and innovation mindsets. Employees are not merely taught how to use a tool; they are equipped to understand its purpose, apply it creatively, and adapt as it evolves (Asata, Nyangoma & Okolo, 2023; Sanusi, Bayeroju & Nwokediegwu, 2023; Uddoh *et al*., 2023). This component emphasizes the co-evolution of human and technological capabilities,recognizing that as systems become more intelligent, employees must learn to interpret, supervise, and ethically use them. Capability development initiatives can include microlearning modules, experiential learning, peer mentoring, and digital academies that reinforce both competence and confidence. The leadership's role in modeling learning behaviors, encouraging experimentation, and rewarding progress rather than perfection becomes essential to embedding a culture of readiness.Figure 4 shows the framework of IT adoption influencing factors in the SME context presented by Ghobakhloo *et al*. (2012).

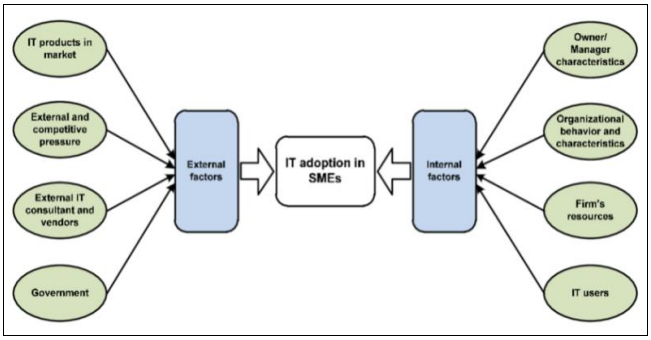

Fig 4: Framework of IT adoption influencing factors in SME context (Ghobakhloo *et al*., 2012)

The fourth construct, adaptive reinforcement, ensures that readiness is not eroded after the initial excitement of deployment fades. Many organizations treat technology adoption as a finite project that ends with go-live, but true adoption is sustained through reinforcementmechanisms that

consolidate learning, reward engagement, and continuously adapt support based on emerging needs. Adaptive reinforcement relies on data and feedback loops to detect signs of disengagement, stress, or underutilization and to trigger timely interventions (Asata, Nyangoma & Okolo, 2022; Bayeroju, Sanusi & Nwokediegwu, 2022). For example, analytics dashboards may highlight departments with declining system usage, prompting targeted coaching or simplification of workflows. Recognition systems and gamification elements can be used to maintain motivation and reinforce desired behaviors. More broadly, adaptive reinforcement involves institutionalizing reflective practices, such as after-action reviews and communities of practice, where employees share experiences, innovations, and challenges. This continuous learning environment transforms readiness from a precondition into a sustained organizational capability (Akinola, Fasawe & Umoren, 2021; Evans-Uzosike *et al*., 2021; Uddoh *et al*., 2021).

Underlying these constructs are several key assumptions that define the framework's philosophical and practical orientation. The first is that technology adoption is fundamentally a socio-technical process success depends as much on human systems as on technological ones. This means that readiness cannot be "engineered" through training alone; it must be cultivated through leadership engagement, trust-building, and empowerment. A second assumption is that readiness is dynamic, not static. It fluctuates across time, departments, and individuals as perceptions evolve, workloads shift, and new challenges arise (Ajayi *et al*., 2023; Bukhari *et al*., 2023; Elebe & Imediegwu, 2023; Oguntegbe, Farounbi & Okafor, 2023). Therefore, the framework assumes the need for continuous monitoring and agile adaptation. Third, it assumes that readiness is distributed; it is not the responsibility of a single function, such as IT or HR, but a shared responsibility among leaders, managers, and employees at all levels. Finally, it assumes that technology adoption must be human-centered. The ultimate measure of success is not just system utilization but whether employees experience enhanced capacity, autonomy, and engagement as a result of technology integration (Balogun, Abass & Didi, 2021; Evans-Uzosike *et al*., 2021; Uddoh *et al*., 2021).

Boundary conditions define where and how the framework applies most effectively. It is most suitable for organizations that have achieved a minimum level of digital and organizational maturity,those that possess the structural, cultural, and leadership capacity to act on readiness insights. In environments characterized by high instability, severe skill shortages, or rigid hierarchies, the framework may require adaptation or phased implementation. It assumes that the organization has some ability to collect, analyze, and act upon feedback data, as readiness assessment and adaptive reinforcement rely on continuous sensing. The framework is designed to complement, not replace, existing project management or change management methodologies. It serves as the human alignment layer that integrates with technical implementation plans, providing a readiness lens through which decisions about timing, resourcing, and communication can be optimized (Asata, Nyangoma & Okolo, 2020; Essien *et al*., 2019; Elebe & Imediegwu, 2020).

The guiding principles of the Technology Adoption–Readiness Framework flow naturally from these assumptions. First, integrationtechnology and human systems must be aligned and developed concurrently. The framework discourages treating technology implementation and employee preparation as separate workstreams. Second, transparentemployees should have clear visibility into the rationale, expected impacts, and support mechanisms associated with new technologies. Transparency builds trust and reduces anxiety. Third, participationreadiness is strengthened when employees are involved in shaping adoption processes, testing tools, and providing feedback (Ayodeji *et al*., 2022; Bukhari *et al*., 2022; Oziri, Arowogbadamu & Seyi-Lande, 2022). Participation shifts the narrative from compliance to co-creation. Fourth, agilityreadiness development must be flexible, iterative, and responsive to new insights. Rather than rigid training calendars or communication schedules, interventions should evolve based on readiness data. Finally, sustainability readiness efforts should aim not just for short-term acceptance but for long-term capability, ensuring that employees can continuously adapt to subsequent waves of technological change (Olinmah *et al*., 2023; Seyi-Lande, Arowogbadamu & Oziri, 2023; Uddoh *et al*., 2023; Umoren *et al*., 2023).

Within this conceptual structure, employee readiness is positioned as the central success factor in digital initiatives, linking strategic ambition to operational execution. It serves as both an outcome and a driver. On one hand, readiness reflects how well employees understand, accept, and are prepared to use new technologies. On the other hand, it actively shapes project outcomes by influencing user adoption rates, data quality, workflow efficiency, and innovation potential. When readiness is high, employees act as catalysts of change, identifying opportunities, refining processes, and championing continuous improvement (Ayodeji *et al*., 2022; Bukhari *et al*., 2021; Elebe & Imediegwu, 2021). When readiness is low, even sophisticated technologies can falter, as disengaged users bypass systems, resist data entry, or revert to outdated methods. The framework, therefore, treats readiness not as a soft or peripheral concept but as a quantifiable, manageable construct with tangible implications for productivity, morale, and organizational agility.

By grounding technology adoption in strategic alignment, diagnosing readiness systematically, building capability deliberately, and reinforcing adaptability continuously, the Technology Adoption–Readiness Framework provides a roadmap for transforming digital investment into sustained performance. It reframes technology adoption from a linear rollout to an ongoing dialogue between systems and people, guided by leadership that views readiness not as an obstacle to overcome but as the very foundation of digital success (Ayodeji *et al*., 2023; Oladimeji *et al*., 2023; Sanusi, Bayeroju & Nwokediegwu, 2023).

2.5 Architecture and Components of the Framework

The architecture of the Advanced Technology Adoption–Readiness Framework is structured around four interlinked layers:strategic foundation, diagnostic intelligence, capability enablement, and adaptive integration. These layers operate in a continuous, cyclical relationship, where each feeds into and reinforces the others. Together, they provide a multi-dimensional structure for embedding readiness into every stage of technology adoption. Rather than treating adoption as a linear sequence of steps, the framework conceptualizes it as a living system in which

data, feedback, and human insight continuously interact to sustain alignment between people, processes, and digital tools (Adesanya, Akinola & Oyeniyi, 2021, Dako, *et al*., 2021, Essien, *et al*., 2021, Uddoh, *et al*., 2021). Through this layered design, organizations can systematically assess readiness, build capacity, monitor progress, and adjust interventions based on evidence rather than intuition.

The strategic foundation layer forms the base of the architecture. It defines the strategic intent and sets the conditions for readiness by linking technology initiatives to organizational vision, culture, and leadership commitment. In this layer, leaders clarify the "why" behind the adoption, ensuring that employees understand not just what the technology does, but how it advances the organization's purpose. This alignment is vital to creating trust and engagement. It also establishes governance mechanisms, communication structures, and accountability frameworks that define roles and responsibilities in the adoption process (Ayodeji *et al*., 2023; Oladimeji *et al*., 2023; Uddoh *et al*., 2023). Leadership plays a central role at this stage by crafting narratives that emphasize empowerment rather than enforcement, framing technology as a tool for growth and collaboration rather than surveillance or control. Policies and budgets are aligned to ensure that investments in technology are matched by investments in people. In effect, this layer provides the philosophical and organizational scaffolding that shapes all subsequent activities (Didi, Abass & Balogun, 2022; Otokiti *et al*., 2022; Umoren *et al*., 2022).

Above this foundation sits the diagnostic intelligence layer, where data-driven readiness assessment and analytics inform decision-making. Here, the framework integrates multiple data sources,employee surveys, system logs, skill assessments, performance data, and qualitative feedbackto measure the cognitive, emotional, and behavioral dimensions of readiness. This layer functions as the sensing mechanism of the system, identifying where confidence is low, where training gaps exist, or where resistance may emerge (Asata, Nyangoma & Okolo, 2022; Bayeroju, Sanusi & Nwokediegwu, 2022). It employs analytics and visualization tools to transform complex human and organizational data into actionable insights. Readiness metrics such as confidence scores, digital literacy indices, and engagement levels provide a dynamic picture of adoption progress. Predictive analytics can even anticipate potential risks, such as burnout or skill mismatches, allowing preemptive intervention. By feeding continuous data into leadership dashboards, this layer ensures that technology adoption remains evidence-based and responsive rather than reactive.

The third layer, capability enablement, translates readiness insights into concrete developmental actions. It is here that the organization builds and strengthens the competencies, mindsets, and support structures necessary for sustained technology adoption. This layer bridges the gap between awareness and action by operationalizing readiness through training, mentoring, and experiential learning. It includes tailored learning pathways that accommodate different digital fluency levels, ranging from foundational literacy programs to advanced skill certifications. Capability enablement also extends beyond technical training to include psychological and social readiness,fostering adaptability, curiosity, and resilience (Ajayi *et al*., 2023; Sanusi, Bayeroju & Nwokediegwu, 2023; Soneye *et al*., 2023). Coaching, peer learning, and communities of practice play critical roles in this phase, enabling employees to share experiences and co-create solutions. The framework encourages leaders to participate visibly in these activities, modeling continuous learning and signaling that readiness is a shared organizational value. In practice, this layer ensures that employees are not only competent in using technology but confident and motivated to explore its possibilities (Evans-Uzosike & Okatta, 2023; Onyelucheya *et al*., 2023; Umoren, Fasawe & Okpokwu, 2023).

The final layer, adaptive integration, ensures the long-term sustainability of readiness by embedding feedback loops, reinforcement mechanisms, and adaptive controls. This layer transforms technology adoption from a one-time event into an ongoing capability. It uses real-time monitoring and analytics dashboards to track utilization rates, performance outcomes, and sentiment trends, ensuring that readiness remains stable even as systems evolve. Feedback loops between employees and decision-makers allow for rapid problem identification and solution iteration. For instance, if a new digital workflow is underused, leaders can investigate whether the issue lies in interface complexity, unclear procedures, or inadequate communication (Arowogbadamu, Oziri & Seyi-Lande, 2021; Essien *et al*., 2021; Umar *et al*., 2021). Adaptive integration also includes recognition systems, performance incentives, and change champions who reinforce desired behaviors and maintain engagement. Over time, this layer evolves into a form of "digital resilience," enabling the organization to absorb future technological shifts with less disruption and greater agility.

These four layers interact continuously, creating a feedback-rich ecosystem that drives learning and adaptation. Strategic intent informs diagnostics; diagnostics shape capability-building interventions; and the results of capability development feed back into strategy refinement and system integration. The cyclical nature of this architecture ensures that employee readiness is not treated as a precondition but as a living, evolving construct. The use of data analytics and readiness metrics is critical in facilitating these interactions. Data acts as both a mirror and a compass,reflecting the current state of readiness while guiding decisions about where to focus improvement efforts (Ayodeji *et al*., 2023; Bukhari *et al*., 2023; Oladimeji *et al*., 2023). Readiness metrics, such as adoption velocity, training engagement, emotional sentiment, and post-implementation performance, provide quantifiable indicators that link human factors to organizational outcomes. They help determine whether technology initiatives are generating the intended behavioral and performance changes, allowing leaders to adjust interventions based on evidence.

Feedback loops function as the nervous system of the framework. Information collected at one layer triggers adjustments in others, ensuring coherence across the system. For example, low engagement data from the diagnostic layer may prompt capability-building programs in specific departments or lead to a re-evaluation of communication strategies in the strategic foundation layer. Conversely, successful training outcomes in the capability enablement layer can inform leadership narratives and policy updates at the strategic level. The framework also supports vertical and horizontal feedback loopsbetween top management and front-line employees, and among peer groups or cross-functional teams,ensuring that information flows freely across the organization (Abdulsalam, Farounbi & Ibrahim, 2021; Essien *et al*., 2021). These feedback loops help create

psychological safety, where employees feel comfortable expressing concerns or offering suggestions without fear of reprisal, reinforcing the emotional component of readiness.

Socio-technical integration sits at the heart of this architecture, ensuring that technology, people, and processes evolve together rather than in isolation. The framework assumes that digital transformation fails when technical systems outpace human systems,when employees are expected to adapt to technologies that were not designed with their workflows, learning capacities, or emotional responses in mind. To prevent this, the framework promotes co-design and participatory implementation, where employees are involved early in the design, testing, and refinement of new technologies (AdeniyiAjonbadi *et al*., 2015; Didi, Abass & Balogun, 2019; Umoren *et al*., 2019). This integration extends beyond user interfaces to encompass organizational processes and decision rights. Technology adoption becomes an opportunity to redesign workflows, clarify accountability, and strengthen collaboration. By aligning technical tools with human values and social systems, the framework ensures that technology enhances, rather than displaces, human capability.

In this socio-technical perspective, data analytics tools are not simply measurement instruments but enablers of dialogue between people and systems. Dashboards displaying readiness metrics become shared reference points that spark conversation among leaders, managers, and teams about how to improve. They also democratize information, allowing employees to see how their engagement contributes to broader organizational goals. Process integration ensures that readiness practicessuch as training, reflection, and feedback collectionare embedded into daily operations rather than treated as temporary initiatives (Abass, Balogun & Didi, 2022; Evans-Uzosike *et al*., 2022; Uddoh *et al*., 2022). Digital tools are used to automate feedback collection, track learning journeys, and personalize support, creating an adaptive learning environment where readiness evolves alongside technology. For example, AI-driven learning platforms can recommend individualized skill-building resources based on user behavior, while collaboration tools can connect employees to peer mentors or expert communities.

Ultimately, the architecture and components of the Technology Adoption–Readiness Framework converge to form a dynamic ecosystem that balances structure with flexibility. The four layers provide a coherent scaffold, while data, feedback, and socio-technical integration keep the system alive and responsive. By treating readiness as both a measurable construct and an evolving capability, the framework ensures that technology adoption is not only efficient but humane. It transforms digital transformation from a top-down mandate into a participatory process that empowers employees, aligns with strategy, and strengthens organizational resilience. In this architecture, technology and people are not opposing forces but partners in a shared journey of continuous learning and adaptation,a journey sustained by insight, feedback, and the collective readiness of a digitally confident workforce (Lawal, *et al*., 2023; Oguntegbe, Farounbi & Okafor, 2023; Uddoh, *et al*., 2023).

2.6 Implementation Pathways in Modern Organizations

Implementing an advanced technology adoption–readiness framework in modern organizations requires more than adding a few extra workshops to a project plan; it calls for re-engineering how digital initiatives are conceived, governed, and experienced by employees. The framework must be woven into digital transformation roadmaps from the outset, rather than bolted on just before go-live. This begins with explicitly positioning readiness as a critical workstream alongside architecture, data, security, and process redesign. In practical terms, when organizations define their transformation roadmapphases, milestones, dependencies, and value cases,they also define a parallel readiness roadmap (Ojonugwa *et al*., 2021; Olinmah *et al*., 2021; Umoren *et al*., 2021). For each major technology initiative, leaders specify not only technical deliverables but readiness outcomes: what employees should understand, feel, and be able to do at each stage. Early phases focus on strategic communication and discovery, mid-phases emphasize capability building and pilots, and later phases concentrate on reinforcement, optimization, and continuous learning. By making readiness visible at the portfolio level, organizations ensure that people-related activities are planned, resourced, and sequenced with the same rigor as system builds and integrations (Didi, Abass & Balogun, 2023; Evans-Uzosike & Okatta, 2023; Uddoh *et al*., 2023; Umoren *et al*., 2023).

Embedding the framework also requires integrating it into standard project and governance methodologies. Digital programs that use agile or hybrid approaches can incorporate readiness checkpoints into sprint reviews, retrospectives, and stage gates. For example, before moving from design to pilot, teams validate not only technical readiness (configurations, integrations, testing) but employee readiness indicators (awareness, perceived usefulness, baseline skills). Steering committees routinely review readiness metrics alongside budget and timeline status. Risk registers and mitigation plans include human readiness risks, such as change fatigue or capability bottlenecks, with clear owners and mitigation actions (Ajonbadi, Mojeed-Sanni & Otokiti, 2015; Evans-Uzosike & Okatta, 2019; Oguntegbe, Farounbi & Okafor, 2019). Over time, this institutionalization means that any new digital initiative automatically triggers readiness assessment, planning, and monitoring, rather than relying on individual project managers' discretion or interest.

Designing readiness assessments is a central operational step. These assessments should be structured but lightweight enough to be practical. Organizations can design multi-dimensional readiness surveys that capture cognitive understanding ("I know why this technology is being introduced and how it affects my work"), emotional responses ("I feel confident/anxious/skeptical about this change"), and behavioral intentions ("I am willing to try, learn, and provide feedback"). Supplementary qualitative methodsfocus groups, listening sessions, and interviews, allow deeper exploration of concerns and expectations, especially in critical roles or high-impact areas (Akinbola *et al*., 2021; Balogun, Abass & Didi, 2021). Digital tools such as pulse surveys and sentiment analysis from collaboration platforms can provide ongoing signals during rollout. Importantly, readiness assessments should be tailored by segment,frontline staff, supervisors, specialists, and managers may have distinct needs and perspectives. The goal is not to produce a single "readiness score," but a nuanced map of readiness patterns that can inform targeted interventions.

From these diagnostics, organizations design training and learning programs that go beyond one-time system demos. Training portfolios should combine foundational modules (basic navigation, key workflows), role-specific modules (process changes, decision rules, exception handling), and capability modules (digital literacy, problem-solving, data interpretation). Blended learning approachesshort e-learning bursts, instructor-led sessions, sandbox environments, peer-learning circles, and job aids,accommodate different learning styles and time constraints. Microlearning can be embedded into the flow of work, such as contextual tips inside the application or short videos linked to common error messages (Akinrinoye *et al*., 2020; Farounbi, Ibrahim & Abdulsalam, 2020). Critically, training is staged in alignment with the roadmap: early exposure for awareness and curiosity, hands-on practice before go-live, and advanced modules post-implementation as users mature.

Communication strategies under the framework are not limited to announcements and FAQs. They are designed as ongoing dialogues that build trust, clarity, and psychological safety. Messages from senior leadership emphasize purpose and benefits, linking technology to strategic priorities and values. Mid-level managers translate these narratives into local realities,explaining what the change means for specific teams, workloads, and performance expectations. Communication channels are varied: town halls, short video messages, internal social platforms, stories from early adopters, and "day in the life" examples that show how work will feel different (Ajonbadi, Otokiti & Adebayo, 2016; Didi, Abass & Balogun, 2020). Two-way channels are just as important; mechanisms such as open Q&A forums, anonymous feedback options, and regular check-ins allow employees to voice concerns and influence the implementation. Transparency about trade-offs, limitations, and lessons learned helps counter cynicism and reinforces the idea that the organization is learning with employees, not imposing change on them.

Leadership, HR, and change champions each play distinct but interconnected roles in operationalizing the framework. Senior leaders set the tone by explicitly framing digital transformation as both a technology and a people journey. They endorse readiness metrics as key indicators of project health, allocate resources for training and support, and visibly participate in learning activities themselves. When leaders attend training, use new tools in their own work, and share their learning experiences,including frustrations and breakthroughs,they legitimize the learning process and reduce perceived stigma around not knowing everything immediately. Strategic decisions about scope, pace, and prioritization of digital initiatives are made with readiness implications in mind; for example, sequencing major rollouts to avoid overwhelming the same workforce segments repeatedly (Balogun, Abass & Didi, 2019; Otokiti, 2018; Oguntegbe, Farounbi & Okafor, 2019).

HR functions act as the architects of readiness capabilities across the organization. They integrate readiness concepts into talent management, performance systems, and workforce planning. Job descriptions and competency frameworks are updated to reflect digital fluency and change agility as core expectations. Performance management cycles encourage discussions about technology use, learning goals, and support needs. HR also collaborates with IT and business units to design digital academies, learning pathways, and career development programs that align with upcoming technologies (Ojonugwa *et al*., 2021; Seyi-Lande, Arowogbadamu & Oziri, 2021; Otokiti *et al*., 2021). In areas where skill gaps are significant, HR leads reskilling and upskilling initiatives, working with external partners when necessary. They also have an important role in monitoring well-being and burnout indicators, ensuring that technology adoption does not unintentionally exacerbate workload or stress without appropriate safeguards.

Change champions,often drawn from respected practitioners in different departments,serve as the local embodiment of the framework. They bridge the gap between central project teams and frontline staff. Champions participate early in pilots and testing, providing real-world feedback that improves system design and training content. During rollout, they act as first-line support, answering questions, demonstrating new ways of working, and modeling positive engagement with the technology (Ajayi *et al*., 2022; Balogun, Abass & Didi, 2022; Umoren *et al*., 2022). Because they share the same context and constraints as their peers, their endorsement carries particular weight. The framework formalizes their role by giving them clear responsibilities, training in communication and coaching, and access to project information. Recognizing and rewarding their contributions reinforces the collaborative spirit necessary for sustained transformation (Evans-Uzosike *et al*., 2024; Onalaja *et al*, 2022; Seyi-Lande, Arowogbadamu & Oziri, 2022; Umoren *et al*., 2022).

Operationalizing the framework also means building technical and analytical infrastructures that support readiness. IT and data teams configure analytics platforms to track adoption and readiness indicators: login frequency, feature usage patterns, time-on-task, error rates, training completion, and helpdesk queries. These are combined with survey and sentiment data in integrated dashboards accessible to leaders, HR, and project teams. Alerts can be configured to flag problematic trends,for example, a sudden drop in usage in a particular region or an increase in negative sentiment keywords (Ajonbadi *et al*., 2014; Didi, Balogun & Abass, 2019; Farounbi *et al*., 2021). These signals trigger rapid inquiry: is the issue related to system performance, workflow complexity, insufficient training, or local leadership behavior? This data-informed approach turns readiness into a manageable variable rather than an afterthought, enabling proactive adjustments such as additional coaching, interface tweaks, or workload recalibration.

Over time, as organizations repeatedly apply the framework across multiple initiatives, implementation pathways become more fluid and mature. Lessons from early projects inform playbooks and templates for future ones. Readiness assessment instruments are refined, training catalogs grow richer, and communication practices become more attuned to the organization's culture. Digital transformation roadmaps start to account not only for systems and capabilities but for readiness capacityrecognizing that there is a finite amount of change people can absorb at any given time. Portfolio management decisions consider not just technical dependencies but "people capacity," staggering initiatives to avoid chronic overload in key roles (Adesanya *et al*., 2022; Balogun, Abass & Didi, 2022; Umoren *et al*., 2022).

Ultimately, implementation pathways grounded in this framework shift the identity of digital transformation from a series of disruptive events to an evolving organizational

capability. Employees come to expect that new technologies will be accompanied by clear rationale, genuine engagement, tailored support, and growth opportunities. Leaders and HR professionals develop the reflex of asking "Are our people ready?" with the same seriousness as "Is our system ready?" The organization becomes better able to navigate ongoing technological change because readiness is no longer a fragile, ad hoc achievement but a cultivated, renewable asset embedded in its structures, practices, and culture (Akinrinoye *et al*. 2020, Balogun, Abass & Didi, 2020, Oguntegbe, Farounbi & Okafor, 2020).

2.7 Implications, Benefits, and Potential Challenges

The implementation of an advanced framework for technology adoption that supports employee readiness offers profound implications for organizations striving to achieve digital maturity. When effectively applied, this framework not only increases adoption rates but also elevates employee engagement, operational performance, and innovation capacity. Its design enables organizations to integrate the human readiness dimension into every technological initiative, making adoption a continuous, adaptive process rather than a one-time transition. However, realizing these benefits is not without obstacles (Evans-Uzosike *et al*., 2021; Uddoh *et al*., 2021). Challenges such as limited resources, cultural inertia, leadership misalignment, and inadequate management support can impede progress. Understanding both the benefits and the barriers allows policymakers, executives, and human resource professionals to embed the framework sustainably within organizational practice and policy.

The most direct and measurable impact of this framework is its ability to improve adoption rates and system utilization. In most digital transformations, success is often evaluated by whether the technology works as intended, but the more critical question is whether people use it effectively and consistently. By emphasizing readiness assessment and capability development, the framework identifies cognitive, emotional, and behavioral gaps before rollout. This allows organizations to design targeted interventions that reduce resistance and confusion during implementation (Seyi-Lande, Oziri & Arowogbadamu, 2018). As employees gain confidence and clarity about their roles, adoption curves flatten less steeply, reducing downtime and accelerating value realization. Data-driven readiness metrics provide an early warning system for emerging disengagement, allowing for rapid corrective action. The result is higher system uptake, fewer workarounds, and smoother integration of technology into existing workflows.

Beyond adoption, the framework strengthens organizational performance through improved alignment between technology use and strategic objectives. Employees who understand the purpose and utility of new tools are more likely to apply them in ways that enhance productivity and innovation rather than simply complying with directives. Performance gains arise not only from increased efficiency but also from the improved quality of decision-making that digital systems enable when used proficiently (Akinbola & Otokiti, 2012; Dako *et al*., 2019; Oziri, Seyi-Lande & Arowogbadamu, 2019). By embedding readiness monitoring within analytics dashboards, leaders can correlate readiness indicatorssuch as confidence levels and engagement scoreswith key performance outcomes, enabling continuous optimization. Over time, this closes the loop between human capability and technological potential, transforming digital investments into sustained performance improvements.

The framework also has a significant effect on employee engagement. When employees are included in the process through communication, feedback mechanisms, and co-design opportunities, they experience a stronger sense of ownership and belonging. Readiness-building interventions such as peer mentoring, digital academies, and recognition systems promote positive emotional connections with technology and the organization itself. Employees begin to view digital transformation not as an imposed disruption but as a shared journey of growth. This shift in mindset enhances job satisfaction and psychological safety, both of which are vital for innovation and retention (Onyelucheya *et al*., 2023; Oshomegie & Ibrahim, 2023; Umoren *et al*., 2023). In organizations that adopt this framework, engagement scores typically rise in parallel with readiness levels because employees feel valued, informed, and equipped.

Another transformative benefit is the cultivation of an innovation-oriented culture. The framework's emphasis on continuous learning and adaptive reinforcement normalizes experimentation and iteration. Employees become more comfortable with ambiguity and change, understanding that readiness is not about mastering a single tool but developing the agility to navigate ongoing technological evolution. As feedback loops capture insights from end users and feed them back into decision-making, innovation becomes decentralized and democratized. Employees closest to the work identify process improvements and emerging opportunities that leadership may not see, driving organic innovation from the bottom up (Akinrinoye *et al*. 2019, Didi, Abass & Balogun, 2019, Otokiti & Akorede, 2018). Over time, this cultural shift creates a resilient organization capable of thriving in rapidly changing digital environments.

Despite these advantages, several barriers can hinder the implementation of the technology adoption–readiness framework. One of the most persistent is resource constraint. Comprehensive readiness initiatives require time, funding, and dedicated expertise in areas such as learning design, analytics, and organizational psychology. Many organizations prioritize system deployment over human enablement, allocating minimal budgets to training and communication. This imbalance leads to superficial interventions that fail to build genuine readiness. Smaller organizations or public institutions may find it difficult to justify upfront investment in readiness infrastructure, even though it yields long-term returns in performance and retention. Addressing this challenge often requires reframing readiness as a risk mitigation and value protection strategy rather than an optional support activity (Akinrinoye, *et al*. 2023, Lawal, *et al*., 2023, Oguntegbe, Farounbi & Okafor, 2023).

Cultural factors represent another formidable barrier. Organizations with rigid hierarchies, siloed functions, or fear-based management cultures struggle to cultivate open dialogue and feedback, which are essential for the framework's success. In such environments, employees may hesitate to express uncertainty or dissatisfaction, causing readiness assessments to produce misleadingly positive results. Similarly, organizations that glorify speed over reflection may skip readiness diagnostics altogether, pushing for rapid deployment at the expense of sustainable adoption. Overcoming cultural inertia requires deliberate leadership.

Modeling leaders must demonstrate vulnerability by acknowledging their own learning curves and encourage psychological safety by rewarding curiosity and initiative. Without this cultural shift, even the most sophisticated framework will fail to penetrate the organizational fabric (Abass, Balogun & Didi, 2020; Didi, Abass & Balogun, 2020; Oshomegie, Farounbi & Ibrahim, 2020).

A third barrier is inconsistent management support. Middle managers often serve as the operational bridge between leadership vision and frontline experience, yet they are frequently excluded from transformation planning or inadequately trained in change leadership. If managers perceive technology as a threat to their authority or workload, they may unconsciously sabotage adoption through passive resistance or minimal engagement (Akinola *et al*., 2020; Akinrinoye *et al*., 2020; Balogun, Abass & Didi, 2020). Sustained management support requires equipping managers with the skills to interpret readiness data, coach their teams, and translate strategic messages into everyday actions. Incentive systems should recognize managers who foster readiness and learning, linking their performance evaluations to successful adoption outcomes rather than purely operational metrics.

In light of these barriers, the framework carries important policy and managerial implications for sustainable technology adoption. Policymakers within large enterprises and public organizations should institutionalize readiness as a standard component of digital transformation policy. This includes mandating readiness assessments before major technology investments, integrating readiness indicators into performance scorecards, and establishing governance mechanisms to monitor human impact throughout the adoption cycle (Evans-Uzosike *et al*., 2021; Okafor, *et al*., 2021; Uddoh, *et al*., 2021). Regulatory and funding agencies in the public sectors can also embed readiness criteria in digital transformation grants, ensuring that investments include human capability development alongside infrastructure upgrades. By formalizing readiness in policy, organizations signal that people are central to technological success.

For managers and practitioners, the framework offers practical pathways to operationalize human-centered adoption. Managers must adopt a dual focus: on achieving business outcomes and cultivating readiness outcomes. In practice, this means including readiness checkpoints in project plans, dedicating resources for continuous learning, and establishing cross-functional "readiness councils" that oversee progress and share lessons. HR professionals should use readiness insights to inform talent strategies,identifying future skill needs, designing personalized learning paths, and shaping recruitment to prioritize adaptability and digital confidence. IT and data teams can collaborate with HR to develop readiness dashboards that provide real-time visibility into adoption health (Seyi-Lande, Oziri & Arowogbadamu, 2019). These dashboards become managerial tools for proactive intervention and continuous improvement.

The framework also contributes to sustainability in a broader sense. Sustainable digital transformation is not simply about deploying green technologies or efficient systems; it is about ensuring that technological change enhances, rather than erodes, human well-being. By addressing burnout and change fatigue, the readiness framework promotes a healthier digital workplace where innovation and resilience coexist. Employees who feel prepared and supported are less likely to experience anxiety or disengagement, leading to lower turnover and higher organizational stability (Didi, Abass & Balogun, 2021; Evans-Uzosike, *et al*., 2021; Umoren *et al*., 2021). This human sustainability dimension is often overlooked in technology policies that focus solely on scalability and cost reduction. Yet, it is this very dimension that determines whether transformation efforts endure or collapse under their own momentum.

In conclusion, the advanced technology adoption–readiness framework offers a powerful reorientation of digital transformation from a technology-centered to a human-centered paradigm. Its implementation can drive higher adoption rates, greater performance, deeper engagement, and a culture of continuous innovation. However, these benefits depend on overcoming resource limitations, cultural inertia, and inconsistent leadership support. Policymakers, executives, and HR leaders must treat readiness not as a peripheral concern but as an institutional discipline,one that safeguards both technological investment and human capability. When readiness becomes embedded in policy, practice, and culture, organizations move beyond episodic transformations toward sustained digital maturity, where technology amplifies human potential rather than displacing it (Abass, Balogun & Didi, 2019; Ogunsola, Oshomegie & Ibrahim, 2019; Seyi-Lande, Arowogbadamu & Oziri, 2018).

2.8 Conclusion and Directions for Future Research

The advanced framework for technology adoption that supports employee readiness in modern organizations offers a reframing of digital transformation as a fundamentally socio-technical endeavor. At its core, the framework argues that employee readiness,understood in cognitive, emotional, and behavioral terms,is not a secondary concern but the central hinge between technological investment and realized value. By organizing adoption around four interlinked constructs:strategic alignment, readiness assessment, capability development, and adaptive reinforcement,the model illuminates how technology initiatives can be designed and managed to honor both organizational ambitions and human realities. Strategic alignment ensures that employees understand the "why" behind new tools and how these tools relate to enterprise goals and personal contribution. Readiness assessment provides the diagnostic intelligence needed to detect gaps in understanding, confidence, and willingness, moving decisions beyond guesswork. Capability development turns insight into action by building skills, resilience, and digital fluency through targeted learning pathways. Adaptive reinforcement institutionalizes feedback loops and continuous support so that readiness is sustained, not exhausted, as technologies evolve.

This integrated perspective yields several important insights. First, it positions adoption not as a discrete project milestone but as a continuous process of mutual adaptation between people and systems. The framework shows how readiness can be monitored, shaped, and renewed through cycles of sensing, learning, and adjustment. Second, it bridges established technology acceptance theories with literature on organizational change, employee well-being, and human resource development. Concepts such as perceived usefulness, effort expectancy, and social influence are woven together with psychological safety, burnout, and

learning culture, yielding a richer explanation of why adoption succeeds or fails in practice. Third, it translates these ideas into actionable layers and components that practitioners can embed into digital roadmaps, governance structures, and everyday management routines. In doing so, the model invites organizations to treat readiness as a tangible assetmeasurable, manageable, and strategically significantrather than an intangible "soft" factor.

Despite its contributions, the framework remains a conceptual model with several limitations that must be acknowledged. It specifies what organizations should do to support readiness, but does not yet demonstrate empirically how strongly each construct influences outcomes across different contexts. The model assumes that strategic alignment, assessment, capability building, and reinforcement mutually reinforce one another, but it does not quantify the relative weight or sequencing of these components. In practice, some organizations may derive most benefit from strengthening communication and leadership behaviors, while others may need to prioritize basic digital skills or workload redesign. The conceptual model does not specify contingencies or thresholds that would help practitioners decide where to focus limited resources.

Furthermore, the framework presumes a baseline level of organizational and digital maturity. It assumes that leaders can articulate a coherent digital strategy, that data infrastructure is sufficiently robust to generate readiness metrics, and that HR and learning functions have the capacity to design and deliver comprehensive development programs. In small organizations, highly resource-constrained environments, or settings with weak digital infrastructure, these assumptions may not hold. The model may require simplification or adaptation to be feasible, yet those adaptations are not elaborated here. Cultural and political dynamics are also treated at a high level. While the framework acknowledges that psychological safety, trust, and managerial support are crucial, it does not fully unpack how power relations, historical grievances, or broader societal factors shape employees' readiness for digital change. As a result, the model risks appearing more universal than it may be in practice.

Another limitation lies in the model's focus on the organization as the primary unit of analysis. It does not explicitly consider multi-employer ecosystems, platform work, or extended supply chains where technology adoption and readiness spill across organizational boundaries. In such contexts, readiness is distributed among partners, contractors, and customers who may not be subject to the same leadership, HR, or governance mechanisms. Finally, while the framework foregrounds the importance of addressing burnout and change fatigue, it does not provide detailed guidance on how to balance the pace of innovation with the cognitive and emotional limits of human adaptation. These nuances suggest that the framework should be viewed as a starting point,a scaffolding for inquiry and experimentationrather than a fully prescriptive solution.

To advance the framework beyond its conceptual stage, several avenues for future research are needed. Empirical validation is a priority. Researchers can operationalize the key constructsstrategic alignment, readiness assessment quality, capability development intensity, adaptive reinforcement strength, and multidimensional readinessand examine their relationships with adoption outcomes such as utilization depth, process performance, error rates, innovation behaviors, and employee well-being. Cross-sectional studies across organizations and sectors could provide initial evidence of which elements of the framework correlate most strongly with success, while controlling for factors such as industry, size, and baseline digital maturity. Structural equation modeling or multilevel modeling could help disentangle direct and mediating effects, particularly the hypothesized role of readiness as a mediator between organizational practices and adoption outcomes.

Longitudinal studies would add critical insight into how readiness and adoption co-evolve over time. By tracking specific technology initiatives from pre-implementation through stabilization and optimization phases, researchers could examine how readiness trajectories differ under varying implementation strategies. For example, do organizations that invest early in readiness assessment and communication experience smoother adoption curves and lower burnout than those that front-load technical configuration? How does readiness fluctuate with successive system updates, and what reinforcement practices best prevent readiness decay? Panel data that follows the same individuals and teams over multiple digital initiatives would be especially valuable in understanding the cumulative effects of change, learning, and fatigue. Such studies could also shed light on causal relationships that cross-sectional designs cannot fully capture.

Cross-sector applications represent another rich field for inquiry. The framework's assumptions and mechanisms may play out differently in healthcare, manufacturing, financial services, education, government, and non-profit organizations. Comparative case studies can explore how regulatory environments, professional norms, risk profiles, and stakeholder expectations shape the feasibility and impact of readiness-oriented adoption. In highly regulated sectors, for instance, readiness interventions may need to emphasize compliance, safety, and ethical use of data, while in creative industries they may focus more on experimentation and user-driven innovation. Research across national cultures can similarly reveal how power distance, collectivism, or uncertainty avoidance influence employee perceptions of technology and change, potentially requiring localized adaptations of the framework.

Future research might also focus on the micro-level mechanisms through which readiness is built and sustained. Qualitative studies exploring employees' lived experiences of technology adoptionthrough interviews, diaries, or ethnographic observationcan illuminate how specific leadership behaviors, peer dynamics, or training formats shape readiness. Experimental and quasi-experimental designs, such as A/B testing of different communication strategies or training modalities, could evaluate which interventions are most effective for particular workforce segments. Investigation into digital learning platforms, AI-driven personalization, and just-in-time support tools would further deepen understanding of how technology itself can enable readiness rather than merely demanding it.

Finally, there is scope for normative and policy-oriented research that examines how readiness-centered adoption can be embedded into standards, guidelines, and governance frameworks. This might include exploring how professional bodies, regulators, or funding agencies can incentivize organizations to adopt more human-centered approaches to digital transformation, or how ethical principles around

fairness, transparency, and well-being can be operationalized in readiness metrics and dashboards.

In summary, the advanced framework for technology adoption that supports employee readiness offers a compelling vision of digital transformation grounded in human capability, learning, and alignment. Its value lies not only in the constructs it defines, but in the questions it raises for both practice and scholarship. By critically examining its limitations and pursuing rigorous empirical, longitudinal, and cross-sector research, scholars and practitioners can refine, challenge, and extend the model. Through this collaborative effort, organizations will be better equipped to navigate technological change in ways that amplify, rather than exhaust, the people at the heart of their systems.

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