COMPETENCY FRAMEWORK DEVELOPMENT FOR HUMAN RESOURCE MANAGEMENT IN SMALL- SIZED INDUSTRIES

by

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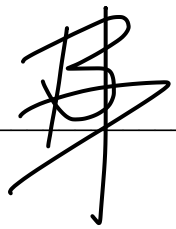

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Dedication

This dissertation is dedicated to all those fervently committed to the advancement of Human Resource Management in Small- Sized Industries and to those who embody the resilience and audacity to chase their professional aspirations.

Challenges may arise, strategies may falter, but recalibrate, fortify and forge ahead.

Semper ad Meliora!

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ABSTRACT

COMPETENCY FRAMEWORK DEVELOPMENT FOR HUMAN RESOURCE MANAGEMENT IN SMALL- SIZED INDUSTRIES

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This study scrutinizes the impact of a Competency Framework Development for Human Resource efficacy in Small-Sized Industries, AI integration enables improved decision making. Addressing the first query, the research evaluates how such a framework aids in gauging personnel suitability and adaptability, thereby leveraging AI for enhanced performance. To the second query, the study delves into how competency framework streamline personnel allocation by trimming time and cost by strategically adaptation of individuals into the roles, leading to improved job satisfaction, productivity, and business efficiency. The research employs a mixed-methods approach, intertwining quantitative and qualitative methods. The methodology incorporates structured surveys and semi-structured interviews, revealing comprehensive insights. Acknowledging possible dissenting viewpoints, the study analyzes both agreement and disagreement to provide a well-rounded perspective. Furthermore, the research extends to examining competency variances between Industries with and without HR departments, promising avenues for future exploration.

In summation, this study will find answer for research questions and test hypothesis to conclude results to contribute a holistic Development of Competency Framework Model, transformative potential in Small-Sized Industries, elucidating its influence on having HR, personnel evaluation, cost reduction, and uses of AI in business optimization.

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INTRODUCTION

1.1 Introduction

Competence becomes significant to demonstrate the typical characteristics and skills that strongly impact the effectiveness of job performance. Making human resources more popular phenomena as competency requirements have changed. The term ‘Competence’ was first introduced by White (1959) as a concept of performance motivation in his article but the term attain attraction when McClelland (1973) published a study on testing for competency rather than for intelligence in which the author dismissed the practice of IQ and aptitude test further, rather focused on personal competencies such as behaviors, motives, values, and interpersonal skills are determinants to be more important in anticipating an employee’s performance and occupational success. Although, there are numerous definitions given on ‘competence’ and ‘competency’ with many scattered contexts, Rankin (2002) concluded competencies definitions of skills and behaviors that organizations expect their staff to practice at work. The most extended description of a concept in management development is ‘competency’. To assess work smoothly in a small – sized industry the basic required resources are machines, materials, money, man force yet the success rate of an organization depends on the quality of resources either materialistic or restrained behavior. Competencies are the most common thread that connects the majority of human resource subsystems.

In today's malignly competitive world many organization becomes more competitive and want to grow rapidly, a fast – paced competence model is required to help them identify competency requirements still there are small industries in which competency have not fully developed because of its time consuming process which includes high- cost. On the other hand, in the recent decades researcher emphasized on the Human Resource Management Performance effect on organizations (Kotey, 2005).

Kerr (1995) stated that many organizations have begun using competency model to ensure the necessary knowledge, skills, abilities and other characteristics (KSAO's) to achieve strategic goals. Competency models becomes a prominent management topic, a total of up to 9 competencies required to depict in a competence model for a particular job (Shippmann *et al*., 2000). Moreover, the need to align business strategies and achieve benchmarks through a more generic model needs to develop. However, Lucia a-Lepsinger (1999) finds it difficult to determine the necessary characteristics for effective performance as organizational roles vary in the management hierarchy. Zacca and Dayan (2018) while linking managerial performance, use structural equation modelling to test a theoretical model and it does result in benefit to organizations better performance.

Despite, extensive research and empirical knowledge, the applicability of competency model has large research gap (Megahed, 2018). Thus, developing a model for every level to support them build performance and bridging the gap through a self-evaluation of strengths, weaknesses, and career aspirations are imperative. This method not only cultivates personal growth, but also harmonizes individual progress with the mission of the company, resulting in increased efficacy and efficiency in the workplace. Such model can foster continuous improvement, making employees a part of agile professional development that also contributes to the company growth. Implementing measures such as establishing clear communication channels and support systems will be

the key to ensure that this dynamic is encouraged, and can facilitate ongoing dialogue between employees and management that fosters trust and collaboration. Besides, this intersection of competence and the academic world was a timely answer to a need expressed by many organizations: how to develop the right skills and competences in an ever-changing landscape. Using things like artificial intelligence and machine learning, organizations can now dynamically track employee behaviors and competencies, leading to personalized development plans and timely interventions. This approach aligns with the growing trend of utilizing digital platforms to enhance Human Resource Management (HRM) practices, ultimately leading to improved organizational effectiveness (Dixit, 2024) . In addition, creating a culture of ongoing feedback can more effectively bolster employee engagement and motivation by making sure individuals keep pace with both their own goals and the goals of the company on a regular basis. With market complexities growing, another use of these innovative strategies or dynamically rethinking workforce capabilities will be critical to maintain competitive advantage.

While to start implementing tech-driven solutions, organizations also need to work on improving the soft skills of their employees, which are becoming a symbol of collaboration and adaptability in changing conditions. Research indicates that emotional intelligence, communication, and teamwork significantly enhance organizational performance by fostering a culture of trust and cooperation (Varadaraj and Al Wadi, 2021). The ability to navigate interpersonal relationships and skills to manage conflicts will not only be important for individual's success but also for achieving collective goals. Thus, through designing training programs that specifically cater to developing such soft skills can be seen as a strategic move, granting employees the tools they need to successfully adapt to change along with appropriate support from the organization's, clearer understanding of the specific skills required for the growth in the future. Also, the

attention is on holistic competency development reinforces the strategic perspective that employees are critical assets, and their upskilling is a key driver of sustained competitive advantage.

Competency skills can be maximized by integrating diversity and inclusion in hiring, as teams comprised of diverse experiences and perspectives tend to yield elevated levels of innovation and stronger problem-solving abilities. By embracing diverse viewpoints and backgrounds, organizations can foster a culture that nurtures innovation, thereby developing more effective solutions to tackle intricate problems (Wickramasinghe, Gamage and Chakraborty, 2013). Also, research suggests that organizations with inclusive practices not only attract top talent but also foster higher employee satisfaction and retention rates, which are critical for maintaining competitive advantage in today's fast-paced business landscape (Ulrich *et al*., 2010). Thus, we suggest that leaders take the extra step to encourage, be inclusive in their talent frameworks as well, making sure every employee feels appreciated and able to bring in their own skills and perspectives to the table to pursue specific business objectives. By nurturing skills across all levels of the organization, this comprehensive strategy will enhance both individual and team-based performance, creating a workforce ready to tackle the challenges of rapidly changing markets.

1.2 Research Problem

Small- sized industries compete with competitors yet the major problem faced is their incompetent management. According to Taşkin, Adali and Ersin (2004) to compete with competitors, small industries have to develop competitive competencies.

Competencies can be understood as a combination of individual traits, which include both intellectual abilities and personal characteristics. These elements can

develop proficiency in individuals, even if they lack direct experience or specialized knowledge (Trichet and Leclère, 2003). Atkinson *et al.* (2022) stated that small firms have different modes of operation, particularly where owner, managers dominate and human resource specialists are largely absent.

The importance to examine the experts and get their inputs for better competence framework development for human resources in small – sized industries where the problem of insufficiency of knowledge in managing resource is an intense topic. Various concern in HR that comprehend it from AI techniques have been practiced. The first one is the complexity of HR outcomes. Consider, for example, what it means to be a "good employee"; there are many dimensions to align it with the most rigor job (Tambe, Cappelli and Yakubovich, 2019). Indeed, collecting inputs from expertise and professionals provides insights into the areas which needs development. Working for development in small- sized industries will be a virtue that will boost the confidence of management. Chaston *et al*. (2001) outline that, as industries move from lower levels to higher levels of learning style they get competence enhancement. This progress nurtures individual growth and also contributes to the overall organizational effectiveness, creating a culture of continuous improvement and innovation.

From the various study of research papers the main problem highlighted with small- sized industries may have the best qualified employee but they *lack in effective competence based hiring* and this seems to be a common problem. Chouhan and Srivastava (2014) stated that organization rely on their competent employees as a main resource so that competency framework development helps the organization in developing a clear strategy for their workforce. Competency framework development was more specific and stick to limited geographic boundaries as well as to the type of

organizations. This study is going to include ample research to overcome these problems by delving into more generic model in this area.

In light of these challenges, small-sized industries must also consider the role of *strategic partnerships* and *collaborative networks* in enhancing their competency frameworks. Engaging with external experts, industry leaders, and educational institutions can provide valuable insights and resources that are often lacking internally (Rao, 2009). Such collaborations not only facilitate transfer of knowledge but also help to benchmark practices against those of more established organizations, thereby identifying gaps and areas for improvement. Furthermore, embracing a culture of continuous learning through workshops and mentorship programs can significantly elevate the skill sets within these firms, adopting an environment where innovation thrives and employees feel valued as contributors to the organization's success (Zacca and Dayan, 2018). When small industries address these areas proactively, they are able to develop a resilient workforce that can handle the changing face of competition while working in close correlation with organizational objectives and growth strategies.

In addition to improving their competency frameworks, small sized industries should also expand their knowledge of developing a diverse workforce which takes in varying perspectives and experiences. Embracing diversity not only enriches problem-solving capabilities but also drives innovation by bringing together unique ideas and approaches (Nnamdi UGO Joseph, 2023). By actively promoting inclusivity within their hiring practices and workplace culture, organizations can create an environment where all employees feel empowered to contribute, ultimately leading to improved organizational performance and adaptability in fluctuating markets (Nguyen, 2024**).** Additionally, it is essential for these firms to implement mentorship programs that pair seasoned

professionals with newer employees, allowing for knowledge transfer and skill development while reinforcing a sense of community and shared purpose within the organization. This comprehensive method for skill enhancement will not just tackle current skill deficiencies but will also develop enduring resilience and a competitive edge in a progressively intricate business environment. By prioritizing continuous learning and development, organizations can ensure that their workforce remains agile and well-equipped to navigate future challenges while fostering a culture of innovation and collaboration.

Furthermore, small-sized industries should also consider the integration of technology in their competency development strategies as a mean to enhance operational efficiency and employee engagement. By leveraging digital tools for training, such as e-learning platforms or virtual reality simulations, organizations can provide tailored learning experiences that cater to diverse skill levels and learning preferences (Abbas *et al.*, 2023). This not only accelerates continuous professional growth but also allow companies to track progress and adapt training programs based on real-time data analytics, ensuring relevance and responsiveness to changing industry demands. Moreover, the shift towards remote work induces a focus on developing competencies related to self-management and digital collaboration, which are essential for maintaining productivity in decentralized teams (Tramontano, Grant and Clarke, 2021).

The existing research problem in small-sized industries revolves around their struggle with ineffective management due to insufficient competency frameworks. Despite having qualified employees, these organizations often lack effective competence-based hiring practices, leading to challenges in developing competitive competencies. Additionally, the absence of human resource specialists and the dominance of owner-managers hinder the establishment of robust competency models. This results in a gap in

knowledge and skills necessary for strategic alignment and small industries growth, emphasizing the need for a comprehensive competency framework that addresses these deficiencies and promotes continuous improvement. Implementing such a framework would not only enhance the hiring process but also expedite targeted employee development, ultimately driving innovation and ensuring that small-sized industries can compete effectively in an ever-evolving market flux.

1.3 Purpose of Research

This dissertation studies the Competency Frameworks as a tailored solution to the specific HRM issues confronting SMEs in the era of AI implementation. While extant literature acknowledges the pivotal role of effective HRM in organization success, this research explores a novel solution with the potential to significantly bolster the competitive edge and long- term sustainability of SSI.

Despite prior studies, the unique characteristics of each business necessitate tailored Competency framework that address specific risk profiles and competence requirements. This research argues that developing such frameworks can significantly increase the chances of successful AI integration and long-term organizational sustainability. This theory helps to bring HRM strategies in line with them to create organization's which are more agile and able to embrace the changes fetch by technology whilst developing challenging work environments that embrace changing intellectual boundaries. This approach not only enhances employee engagement and retention but also positions small industries to leverage their unique strengths in a rapidly evolving market evaluation. Moving beyond mere technical skills and qualifications, these customized frameworks will encompass behavioral traits, attitudes, and adaptability

relevant to the AI-driven era. By empowering small industries to compete effectively, cultivate strategic workforces, and unlock the full ability of their employees, these frameworks aim to nurture talent development, drive sustainable growth, and foster a culture of innovation.

In summation, the competency framework benefits all employees in the organization by recognizing and developing core skills to develop happiness and satisfaction and lead to increased productivity and engagement. This research investigates the transformative potential of a customized competency framework model as a solution to the specific HRM challenges faced by small industries in the context of AI integration. While existing research stresses the importance of effective HRM, a significant gap exists between the sophisticated talent management systems of large corporations. This discrepancy hinders their ability to compete effectively for skilled personnel and optimize their human resources. This research seeks to address the gap by offering a practical and adaptable solution specifically tailored for HRM and Small- scale industries (SSI).

Furthermore, to develop bespoke competency models, it will be crucial to integrate an iterative feedback mechanism into competency framework. This approach allows organizations to continuously refine competencies based on real-world performance outcomes and employee experiences, ensuring that the framework evolves alongside both market dynamics and technological advancements. Subsequently, leveraging data analytics can provide insights into workforce trends and skill gaps, enabling SSI to proactively address areas requiring development before they become critical issues. Organizations can create a culture with an eye on agility and responsiveness, which not only improves operational efficiency but encourages employees to take their professional development into their own hands, resulting in a more engaged workforce that can innovate within their industries and stand out.

1.4 Significance of the Study

The proposed research has a long - term goal of providing a better understanding of overall purpose of developing a comprehensive competency framework for human resource in small scale industry. In other words, **identifying how to evaluate the suitability and adaptability of personnel.** The objective of the research is to enhance employee retention and employee efficiency and defining the required competencies.

More specifically, the research has the following *sub - objectives*:

1) To assess the pivotal competencies required for managing workforce challenges in the small-scale industries, within the context of evolving trends in artificial intelligence.

2) To develop a systematic method that align with Human Resource, facilitating overall business strategy to fill the skill modeling to explore existing small scale industry practices and ongoing research findings related to constraint modeling methodologies with a focus on HRM.

3) To review and analyze diverse origins and traits associated with the limiting factors usually observed in contributing to a better understanding in small scale industries.

4) To outline a conceptual competency framework that embraces the manifold domain human resource with comparison to big industries, using insights gained from both the quantitative and qualitative phases of the research to advice.

Within the section of the research methodology, details covering on how the data will be collected and the sample of the study will be structured.

1.5 Research Purpose and Questions

To shed light on the intricacies of this topic and ultimately attain the established goals, this research investigates the following crucial questions:

1. **The first question was how Competency Framework Development model for effective Human Resource in Small- Sized Industries can help them to evaluate the suitability and adaptability of personnel and improve their performance with the help of AI?**

The research thus far demonstrate that by developing a comprehensive HR competence model small scale industries can align their HR practice with their overall business strategy, identify skill gaps, and provide targeted training and development opportunities to improve HR personnel's performance. AI technology can further enhance HR competencies by providing automated assessments and data – driven insights to optimize decision– making. It identifies potential talent and assesses HR personnel’s adaptability to new roles, building a robust HR pipeline and retaining key employees. Leveraging AI improves HR management and help small scale industries achieve their business goals.

Importance of the Question:

In the dynamic landscape of small-sized industries, aligning human resource practices with organizational goals is crucial. Many of these businesses struggle with inadequate HR frameworks, leading to mismatches between personnel capabilities and job requirements. This research question is vital because it seeks to uncover how competency frameworks can enhance the evaluation of personnel. By identifying the right individuals for the right roles, organizations can leverage their strengths, ultimately boosting overall performance. The integration of AI into this process adds a layer of sophistication,

providing data-driven insights that can refine hiring practices and performance assessments.

How It Will Be Answered:

To tackle this question, a mixed-methods approach will be employed. On the quantitative side, surveys will be distributed to Employees, HR personnel and Managers in small-sized industries. These surveys will gather data on their current HR practices and the perceived effectiveness of competency frameworks. Statistical examination will subsequently facilitate the identification of correlations between organizations that employ competency models and those that do not, while the outcomes resulting from the implementation of these frameworks, alongside enhancements in employee performance metrics, will inform the pursuit of more requisite competencies in the era of artificial intelligence. On the qualitative side, an extensive semi-structured written interview will be disseminated via Google Forms to focus groups comprising human resource professionals, which will provide valuable insights regarding their experiences with competency frameworks and artificial intelligence tools. This combination will paint a comprehensive picture of the challenges and benefits associated with these frameworks.

2. **The second concern, which needs to know how under the aegis of using competency model can cut down the cost and time by putting right person at right job in small-sized industries allows to identify and attract candidates who already possess the necessary competencies, reducing the time and cost of recruitment?** Moreover, placing the right person in the right job leads to increased job satisfaction and productivity, which ultimately results in enhanced employee retention and business efficiency.

Importance of the Question:

Recruitment can be a daunting and costly endeavor, especially for small-sized industries that often lack the resources for extensive hiring campaigns. This question is significant because it focuses on how competency models can streamline the recruitment process. By ensuring that the right candidates are placed in the right roles, organizations can enhance efficiency, reduce turnover, and ultimately improve their bottom line. Understanding the implications of competency-based hiring can lead to more strategic workforce planning and better resource allocation, which is essential for the sustainability of small industries.

How It Will Be Answered:

This research question will also utilize a mixed-methods strategy. On the quantitative part, data on recruitment costs, time-to-hire, and employee retention rates will be analyzed. By collecting data from multiple small-sized industries, trends can be identified, and potential savings and efficiencies realized through competency-based hiring practices can be deliberate. On the qualitative side, case studies of companies that have successfully implemented competency models will be referred and semi-structures written Interviews with HR personnel will provide insights into their experiences and the tangible benefits observed, such as reduced recruitment times and improved employee satisfaction.

3. The final issue that has to be investigated in greater detail in future research, does Competencies have any difference in measurable context on workers in Industries with HR and without HR?

In small-scale industries with or without HR departments, competencies matter. Depending on the company's size and structure, several competencies may be measured.

Smaller businesses rely on more informal techniques like on-the-job observations and feedback from managers and coworkers which leads to bias, whereas larger organizations with an HR department utilize formal methods like performance metrics and employee assessments. Understanding work needs, managing personnel, and achieving corporate objectives.

Importance of the Question:

This question digs deep into the impact of having dedicated HR departments on competency measurement and development. Understanding the disparities between organizations with structured HR frameworks and those that rely on informal practices is essential. The findings can highlight the differences in employee support, development opportunities, and overall organizational effectiveness. For small-sized industries, this research can serve as a compelling argument for investing in HR capabilities, demonstrating the potential benefits of having a structured approach to human resource management.

How It Will Be Answered:

A mixed-methods approach will be applied here as well. On the quantitative side, a comparative analysis will be conducted using performance metrics from organizations with and without HR departments. Surveys will assess employee competencies, satisfaction, and retention rates in both settings, allowing for statistical comparisons to identify significant differences. On the qualitative side, semi- structures written interviews with HR professionals will explore their perceptions of competency development and support. This qualitative data will provide context to the quantitative findings and reveal the underlying reasons for any observed differences.

This distinction highlights the varying approaches to competency measurement and development, which can ultimately influence employee satisfaction and retention rates across different organizational contexts. In small-scale industries without dedicated HR departments, the lack of structured competency frameworks can lead to inconsistencies in employee evaluations and development opportunities. This inconsistency can hinder the growth of both employees and the organization, as individuals may not receive the necessary support to enhance their skills or advance in their careers.

By employing a mixed-methods approach to these research questions, the study aims to provide a well-rounded understanding of the role of competency frameworks in enhancing HR practices in small-sized industries. The combination of quantitative data and qualitative insights will not only highlight the effectiveness of competency frameworks but also offer practical recommendations for organizations seeking to improve their human resource management strategies. This holistic approach will ensure that the research findings are robust, actionable, and relevant to the unique challenges faced by small-sized industries.

1.6 Hypothesis

The hypothesis posits that implementing competency frameworks within small-sized industries will lead to significant improvements in employee performance and overall organizational effectiveness. To test this hypothesis, the study will employ a mixed-methods approach, gathering both statistical evidence and personal testimonies to assess changes in productivity, employee satisfaction, and retention rates. This comprehensive evaluation will provide a clearer understanding of how competency

frameworks can be tailored to meet the specific needs of small-sized industries, ultimately facilitating a more engaged and skilled workforce.

Therewithal, as small-sized industries navigate the complexities of AI integration and competency framework development, it becomes increasingly vital to consider the role of emerging technologies in enhancing human resource management practices. For instance, leveraging artificial intelligence can streamline recruitment processes by utilizing predictive analytics to identify candidates whose skills align closely with job requirements, thereby reducing hiring time and costs significantly. Likewise, these technologies can facilitate ongoing employee training through personalized learning platforms that adapt to individual competencies and career aspirations, encouraging a culture of continuous improvement and adaptability within organizations. This proactive approach will ultimately empower businesses to harness their workforce's full potential while effectively addressing the challenges posed by rapid technological advancements.

Hypothesis 1:

H0 (Null Hypothesis):There is no significant relationship between the implementation of Competency Framework Development models in Small-Sized Industries and the evaluation of personnel suitability, adaptability, and performance improvement with AI.

Ha (Alternative Hypothesis):There is a significant positive relationship between the implementation of Competency Framework Development models in Small-Sized Industries and the evaluation of personnel suitability, adaptability, and performance improvement with AI.

Rationale:

The implementation of competency frameworks is widely recognized as a strategic approach to enhance human resource management practices. Research by Agarwal and Raghav (2024) emphasizes that personal competencies, including behaviors and interpersonal skills, are crucial predictors of employee performance. Furthermore, the integration of AI into these frameworks can provide data-driven insights that refine the evaluation process. A study by Dima *et al*. (2024) demonstrates that AI technologies can enhance HR competencies by automating assessments and optimizing decision-making, leading to improved personnel suitability and adaptability. Therefore, it is reasonable to hypothesize that the implementation of competency frameworks, particularly when combined with AI, will yield significant improvements in evaluating personnel performance.

Hypothesis 2:

H0 (Null Hypothesis): The use of Competency Models does not have a significant impact on reducing costs and time associated with personnel placement in Small-Sized Industries.

Ha (Alternative Hypothesis): The use of Competency Models significantly contributes to the reduction of costs and time in placing the right person at the right job in Small-Sized Industries.

Rationale:

Recruitment is often a costly and time-consuming process, particularly for small-sized industries. Competency models streamline this process by ensuring that candidates possess the necessary skills and attributes for specific roles, thereby reducing the time

and costs associated with recruitment. Research by Bakanova and Shikov (2020) indicates that organizations relying on competent employees as their main resource can optimize hiring processes through competency-based strategies. Moreover, a study by Patrick and Kumar (2012) illustrates that aligning recruitment practices with competency frameworks leads to improved job satisfaction and productivity, ultimately enhancing employee retention and organizational efficiency. Thus, it is plausible to hypothesize that the use of competency models will significantly reduce costs and time in personnel placement.

Hypothesis 3:

H0 (Null Hypothesis): There is no significant difference in measurable impact on workers between Industries with HR departments and those without HR departments.

Ha (Alternative Hypothesis): There is a significant difference in measurable impact on workers between Industries with HR departments and those without HR departments.

Rationale:

The presence of dedicated HR departments plays a crucial role in the structured development and measurement of competencies. Research by Atkinson *et al.* (2022) highlights that small firms often lack specialized HR expertise, which can lead to informal competency evaluation methods that may not effectively support employee growth. In contrast, organizations with formal HR departments utilize structured approaches to assess competencies, leading to enhanced employee support and development opportunities. Studies indicate that companies with established HR frameworks experience higher employee satisfaction and retention rates (Cardy and

Selvarajan, 2006). Therefore, it is reasonable to hypothesize that significant differences exist in the measurable impact on workers between industries with and without dedicated HR departments.

Moreover, as SSI increasingly recognize the necessity of adopting sophisticated HR practices, it becomes imperative to explore how technology can bridge existing gaps in competency management. Integration of contemporary practices like HRIS and artificial intelligence streamlines recruitment process not just for hiring a single employee but also for discovering existing talent and help lead them towards improvement by aligned initiatives and training plans. Finally, creating an iterative labour force capable of meeting the changing needs of industry. Studies report significant productivity gains in SMEs adopting HRIS (Human Resource Information System) (Saira, Zariyawati and Annuar, 2010). Driven by cost reductions and process efficiency, a comprehensive analysis will be conducted that includes data collection from both types of industries, allowing for a comparison of key performance indicators related to personnel management and employee outcomes.

In conclusion, each hypothesis is underpinned by existing literature that highlights the importance of competency frameworks and the role of HR practices in enhancing organizational performance.

1.7 Chapter Structure Overview

1. Introduction

-Definition and significance of competence in HR management, particularly in small-scale industries.

- Historical context and evolution of competency frameworks.

2. Research Problem

- Identification of challenges faced by small-sized industries in management and competency development.

- Discussion on the lack of effective HR frameworks and the impact on organizational performance.

3. Purpose of Research

- Exploration of customized competency frameworks as a strategic solution for SMEs.

- Emphasis on aligning HR strategies with AI integration and organizational goals.

4. Research Questions

- Examination of how competency frameworks can enhance personnel evaluation and performance.

- Analysis of the impact of competency models on recruitment efficiency and cost reduction.

- Investigation of differences in competency measurement between industries with and without HR departments.

5. Hypotheses

- Presentation of three key hypotheses related to the effectiveness of competency frameworks in improving HR practices and organizational outcomes.

6. Significance of the Study

- Discussion on the long-term benefits of developing a comprehensive competency framework.

- Importance of addressing workforce challenges and enhancing employee retention and efficiency.

Key Topics to be discussed:

- Competency Frameworks: Understanding their role in enhancing HR practices and aligning with business strategies.

- Challenges in Small-Sized Industries: Exploring the unique HRM challenges faced by SMEs and the need for effective competency development.

- AI Integration: The significance of incorporating AI in competency management to improve recruitment and employee development.

- Quantitative and Qualitative Research Approaches: Methodologies to evaluate the impact of competency frameworks on employee performance and organizational efficiency.

- Diversity and Inclusion: The importance of fostering diverse work environments within competency frameworks to drive innovation and problem-solving capabilities.

This chapter aims to provide a comprehensive understanding of how tailored competency frameworks can address the specific HR challenges in small-sized industries, ultimately leading to enhanced organizational effectiveness and sustainability. Competency framework aren’t just theory; they’re a way for companies to make real improvements in how they manage their people and by making it more adaptable.

CHAPTER II:

REVIEW OF LITERATURE

2.1 Theoretical Framework

There is wide- ranging of treatise available on competency and competency framework in literature review for the purpose of successful in- depth acumen into the competency mapping in small- sized industries. To understand the term ‘Competence’ requires prudent definition for the reason of various use of the term ‘Competencies’ were expressed. Competency is one of the most replete business research, understanding English dictionary for competencies are vast, obscure and inferred which prone to assortment of perception. Back in the time of American Management Guru McClelland (1973) recognized human trait for the first time that is called ‘competence’. According to Hogg (1993, p.23) “Competencies are the characteristics of a manager that lead to the demonstration of skills and abilities, which result in effective performance within an occupational area. Competency also embodies the capacity of transfer skills and abilities from one area to another”. Later, Skorková (2016) stated competency as a person’s ability to perform certain activities – quality, skills, and the ability to do something. Agnate to Albanese (1989), Competencies are individual characteristics that are used to have effect on an organization’s management.

Campion *et al*. (2011) asserted ‘Competency’ as an innovative model which helps management to focus more on job-related information and personnel skills of employees, the motive was to explain the many uses of the competency model. However, there are many models that can be used to manage performance but Shet *et.al* (2019) stated that most organizations use MBO (Management by objective), KPI (Key performance indicators), KRAs (Key result area), and balanced scorecard-based goal systems, CEOs (Chief executive officers) feel the PMS (Performance management system) is not

effective. The time and money needed to build and maintain these systems are the biggest downsides. Furthermore, these approaches might not be appropriate for all industries and might not accurately reflect the particular objectives and difficulties of small-scale businesses. The emphasis on individual achievement, which could not fit with the cooperative ethos of small businesses, is another possible drawback. Effective Competency Modelling for Human Resource Management in Small- Sized Industries.

Human Resource Management is considered to be an effective area (Altinay, Altinay and Gannon, 2008). Manifold of human resource competency models have been developed, demonstrated and driven. At the same time many results confirmed to be ineffectual other impacted to be extremely lucrative still there is no step- to- step guide available for effective competency model for human resource is small- sized industries. Boyatzis (2008) considered that development of competencies is needed for effective management, and leaders require designed programs to focus on learning, competencies that can predict effectiveness in management, professional and leadership roles in many sectors of society. Noe (2014) asserted that the employee's attitude, behavior, and performance in an organization get influenced by human resources. The most important asset of a company is Human resource management (HRM) so companies started to be more concerned about their HRM, a need, to awaken the interest of small-sized company owners to know the use and importance of real resources. Considering the poor implementation of human resource practices Priyanka *et al.* (2022) defended that it ends in unreliable outcome. However, Human resources are an unavoidable process in the growth of organizations.

The HR competency model by Ulrich (2008) proposes that HR professionals must master six competencies: *Credible activist, Strategic positioner, Capability builder, Change champion, human resource innovator and integrator,* and *Technology proponent*.

The research based on 20,000 respondents and completed a140 behavioural and knowledge item assessments (HR professionals and their line and HR associates) around the world.

Although there are many HR competency models available, the three models mentioned here are the latest and comprehensive, covering almost all the competencies required.

Table 1.1 Summarizes the Key Information about the Existing HR Competencies Models (Kieran, 2019); (Darien, 2017); (Meginley, 2022)

HR Competency Model	**Key Competencies**	**Description**	**Framework**	**Application in HR**	**Strength**	**Weaknesses**
Ulrich Competency Model	Strategic positioner, credible activist, change champion, capability builder, HR innovator, Technology proponent	HR professionals should develop competencies in six key areas to be effective	Ulrich's 360 degree view	HR strategy development, HR function management, HR transformation	Provides framework for HR professionals to develop key competencies	Criticized for being too broad and lacking specificity and include outside – in too soon.
Strategic Human Resource Management (SHRM) HR Competency Model	HR Knowledge, business acumen, communication, Relation management, ethical practice, critical evaluation, global &cultural effectiveness, leadership and navigation, consultation	HR professionals should develop competencies in nine key areas to drive business success	SHRM Body of Competency and Knowledge	HR strategy development, talent management, employee engagement	Provides a clear framework for HR professionals to develop competencies	Limited empirical validation

Human Resource Certification Institute (HRCI) Competency Model	Strategic positioner, credible activist, paradox navigator, culture & change champion, Human capital curator, total reward steward, technology, analytics, compliance manager	HR professionals should develop competencies in nine key areas to drive organizational success	HRCI with 3 main core competencies with Certification Program	HR strategy development, workforce planning, organizational development	Comprehensive and up-to- date with industry trends	Focused on certification rather than practical implication and does not capture full HR domain

Business oratory in management has already moved towards artificial intelligence (AI) is astounding. Although the real world is different, about 41% of CEO's report that they are not able to adapt new data analytical tools (Tambe, Cappelli and Yakubovich, 2019). The persuasive utilization of AI to Human Resource obstacle presents contrasting questions than the other area. Admitting the fact that AI topic related to human resource is expensive, the research study will stick to the point to improve the performance of human resource with the help of AI to possible stretch.

Creating a comprehensive framework for HR management in small industries improves employee performance and organizational efficiency. To understand this, past research on competence frameworks and AI in Human Resource for small industries, methodologies, samples, findings, and limitations needs to be considered:

1) The research report "HR Management Practices and Growth in Small Service Firms" by Altinay, Altinay and Gannon (2008) used a quantitative survey of 200 HR practitioners. The purpose of this study was to look at the relationship between HR practices and growth in small service businesses. The findings revealed that some practices, such as performance assessment and training, have a favorable impact on

growth. However, the study was limited to the influence of HR practices and did not take into account broader development variables.

2) The study pursued by Salman, Ganie and Saleem (2020) three objectives: tracking competence evolution, examining its meanings, and categorizing its dimensions. It involved reviewing literature from 1959 onwards, initially selecting 170 studies and later narrowing down to 63. The findings stated competence's historical journey, its interchangeability with competency, and a classification of 16 dimensions. The study offers implicate for HR development research, offering a distinct contribution to understanding employee competence. The methodology approach was literature review, analyzing diverse databases dating back to 1959.

3) The research published by Ibrahim, Abdullah and Ismail (2016), was titled "Competence for Internationalized SMEs." They interviewed 15 SMEs from various categories using a descriptive method. Their theme analysis indicated multi-dimensional competencies critical for worldwide success. The findings emphasized innovation, environmental survey, and management as essential competencies. The study's limitations, however, include its small sample size and restriction to Malaysian SMEs.

4) The study conducted by employed a qualitative research approach, extensively reviewing previous literature to elucidate the pivotal role of competency models in enhancing HRM practices. It's important to note that the research did not involve primary data collection, which precluded the determination of a specific sample size. The study acknowledged the potential for varying interpretations of competencies and the intricate complexities associated with their practical implementation, while also recognizing inherent limitations. In potential of competency models to significantly enhance organizational performance, particularly within the realm of HRM practices. Leading small-sized business in the dynamic environment involves a lot of challenges that are

associated with employee's management and organizational growth (MacMahon and Murphy, 1999).

The first question is whether the Competency Framework Development Model for Effective Human Resource Management in Small-Sized Businesses is a useful method for such businesses to evaluate personnel competence and accommodating AI in their performance. First of all, the understanding of the idea of competency frameworks and their function in human resource management (HRM) is necessary (Ulrich *et al.*, 1995). The theoretical underpinning of this study consists of both the Hypothesis of Rational Action and the Theory of Human Society. Theory of Reasoned Action: The Theory of Reasoned Action is a psychological theory that tries to explain human behavior through the cognition and attitude status we have as individual. This theory states that people are most likely to behave in a particular way if they are strongly motivated by inner feelings and have a strong belief about the behavior and if they are the one facing social pressure to do the behavior. Human-Society Theory: The Social-Humanistic Theory, which also referred to as the Human-Society theory stipulates social factors like relations with others as key agent of man behavior and growth.

The literature examination presented in this chapter at this juncture elucidates the notion of competency frameworks and underscores the significance of their integration within the domain of HRM. It advanced the rationality theory of actions and the human society theory to understand behaviour's related to framework development. The literature review also elucidated that the key to effective management of human resources within small-scale industries should be strategically oriented to achieve organizational success. The studies therefore proved at a distance that by creating an HR competence model the SSI can align their HRM work to the business organizing principles, and

identify the skill gaps, on the basis of which it will be possible to provide a targeted trainings and improvements opportunities to the personnel in HR service.

Moreover, the innovation of Artificial Intelligence (AI) also contributes significantly to the development of the Human Resources (HR) employee skill framework. The intelligence exhibited is attributable to the sophisticated analytics and predictive capabilities that facilitate the evaluation, efficiency, and adaptability of individuals, thereby enabling effective up skilling. Consequently, the theoretical framework of this investigation is grounded in the Theory of Planned Behavior (Ajzen, 1991) and the Human-Society Theory (Lam, Baum and Pine, 2003) , both of which elucidate human behavior as an integral component of a competency model aimed at enhancing the human resources of small business enterprises.

2.1.1 AI Integration in Competency Frameworks

AI Competency Framework: Advancing on the HRM Evolution Pathway Through the application of machine learning and natural language processing, AI solutions enable organizations to automate competency evaluations, identify deficiencies in skills, and propose tailored development strategies.

The incorporation of AI within small-scale HR practices revolutionizes the sector by addressing constraints in resources and augmenting HR productivity. AI instruments will invigorate recruitment methodologies through automation, forecasting which candidates are most suitable for specific roles while providing data-driven insights for performance management. Nevertheless, it is imperative to consider the ethical ramifications associated with AI and algorithms, including issues such as algorithmic bias and data privacy. Unilever’s Human-AI Hybrid Model, which integrates the efficacy of

AI with the discernment of human judgment, represents a notable example of a hybrid approach to competency management (Hu, 2023).

2.1.2 Competency Frameworks in Small-Sized Industries

The new segment executives of small-sized industries that consistently encounter challenges related to competency awareness, and they fail to implement a competency framework within the organization, which raises concerns regarding their lack of access to human resource professionals, career progression pathways, or a formal HR framework. In the framework of this artificial intelligence paradigm, competency frameworks enable organizations to incorporate the essential human components into their systems, thus readjusting their skill sets to sustain competitiveness in the market. Small-sized enterprises have adopted competency frameworks, particularly those that have made significant strides in enhancing employee retention, productivity, and innovation (Zacca and Dayan, 2018).

For instance, a case analysis carried out in 2022 pertaining to Müller Manufacturing, a small German firm, demonstrated that the implementation of AI-driven competency evaluations resulted in an 18% decrease in employee turnover and a 22% enhancement in productivity over a 12-month period (Zacca and Dayan, 2018). This illustrates the transformative potential of competency frameworks in small-sized industries, particularly when integrated with AI technologies.

2.1.3 Synthesis of Theoretical Foundations

The examination of the existing literature pertinent to this research amalgamates *McClelland's Competency Theory*, *Boyatzis's Competency Iceberg Model,* and *Ulrich's HR Competency Model* in delineating HR competencies from the viewpoint of small-

sized enterprises. The integration of AI into competency frameworks represents a significant innovation, empowering organizations to automate assessments, identify skills deficits, and provide customized development plans. Notwithstanding, the ethical ramifications associated with the application of AI necessitate thorough examination, and that a hybrid model, which integrates the advantages of AI with the nuances of human discernment, may present a feasible trajectory for the governance of competencies with elevated integrity.

With these theoretical foundations established, small-sized enterprises can formulate specific competency frameworks that will ensure employees possess the requisite skills to achieve their objectives, optimize the efficacy of HR functions within an organization, and, crucially, facilitate the attainment of business success. Section 2 delves into the Theory of Reasoned Action and its significance in the development of competencies among small-sized enterprises.

2.1.4 Challenges in Competency Framework Implementation for Small-Sized Industries

Competency frameworks possess notable theoretical and practical benefits; however, their execution presents considerable challenges for small-sized enterprises. A primary obstacle faced by these organizations is the scarcity of resources. Unlike larger corporations, many small-sized industries lack the financial capacity and human resources required to develop comprehensive competency models. The temporal and financial investments associated with the creation and maintenance of these frameworks serve as a significant deterrent for numerous small enterprises contemplating the adoption of Corporate Social Responsibility (CSR) and Governance Frameworks (Shet, Patil and Chandawarkar, 2019).

The deficiency of specialized human resource personnel constitutes an additional challenge. In a considerable number of small-sized industries, HR responsibilities are often undertaken by owner-managers or staff lacking formal HR training. This inclination towards generalization frequently results in organizations producing inadequately designed competency frameworks that fail to correspond with the specific cultural requirements of the organization. For instance, small businesses may struggle to identify skill deficiencies or implement targeted training initiatives without a comprehensive understanding of competency mapping to particular job roles (Atkinson *et al.*, 2022).

Furthermore, the rapidly changing landscape of small-sized industries tends to undermine the sustainability of competency frameworks. These firms typically operate in environments characterized by swift market fluctuations. Consequently, traditional competency models, which are frequently static and inflexible, may no longer be relevant within such dynamic contexts. As a result, small-sized industries are increasingly seeking agile and adaptive frameworks that can evolve in tandem with their business growth (Lucia and Lepsinger, 1999).

2.1.5 The Role of AI in Addressing Implementation Challenges

The integration of Artificial Intelligence (AI) with competency frameworks presents significant solutions for small industries. AI can expedite and reduce costs in competency assessments, outperforming traditional methods. Tools like HireVue and Pymetrics exemplify this by employing machine learning to identify optimal candidates based on data analysis (Tambe, Cappelli and Yakubovich, 2019).

AI enhances competency frameworks through real-time performance monitoring and contextualization for employees. Systems like SAP Success Factors leverage performance data to customize training programs, aligning workforce development with

organizational goals (Pickett, 1998). Additionally, the dynamic nature of AI allows small industries to swiftly adapt to market changes and maintain product relevance.

However, the implementation of AI in competency frameworks poses several challenges. Ethical issues regarding algorithmic bias and data privacy must be carefully addressed to ensure responsible AI application. Furthermore, small industries may face barriers such as insufficient technical expertise or resistance to change. To foster AI proficiency, organizations must invest in employee education and training (Marler and Boudreau, 2017) , which is essential for overcoming these hurdles as identified in the literature.

2.1.6 The Need for a Hybrid Approach

Thus, a hybrid approach is proposed for developing competency frameworks in small-sized industries due to their unique challenges and resources. Utilizing AI to automate parts of competency mapping, alongside the expertise of HR professionals, ensures that frameworks are data-driven and culturally aligned with the evolving business landscape. An illustration is Unilever's Human-AI Hybrid Model, which employs AI for competency assessments, while human managers validate and provide qualitative insights (Hu, 2023).

This combined strategy allows small-sized industries to prioritize technical competencies alongside soft skills. While AI effectively evaluates hard skills, soft skills such as emotional intelligence, creativity, and teamwork necessitate human assessment. Merging these methodologies fosters a comprehensive competency framework development tailored to the diverse skill requirements of small-sized industries.

2.1.7 Linking Competency Frameworks to Organizational Success

Competencies fundamentally pertain to the facilitation of organizational success, with the primary objective of a competency framework being to achieve this alignment by associating employee skills and capabilities with organizational objectives. The establishment of competency frameworks is of paramount importance. The identification of criteria and benchmarks for personnel is a crucial component in augmenting workplace engagement through employee competency frameworks; organizations that possess well-structured frameworks can foster enhanced employee engagement, productivity, and innovation (Zacca and Dayan, 2018). Such outcomes are pivotal for small industries, enabling them to effectively compete with larger corporations.

For instance, a study focusing on small-sized manufacturing enterprises in India revealed that firms which adopted systematic competency frameworks (such as competency characterization) realized a 28% enhancement in productivity and noted a 20% reduction in employee turnover (Rao, 2009). When integrated with artificial intelligence technologies, these findings underscore the substantial impact that competency frameworks can have on the overall success of a business.

2.1.8 Transition to the Theory of Reasoned Action

Although these competency frameworks serve a significant role in aligning employee capabilities with organizational objectives, the behavioral and social determinants that influence employee performance must also be considered. A potential theoretical framework for investigating these concepts is the Theory of Reasoned Action in conjunction with the Human Society Theory.

According to the Theory of Reasoned Action, human behavior is influenced by individual attitudes and subjective norms, which subsequently affect a person's intention

to perform a particular action (Ajzen, 1991). Furthermore, from the standpoint of this theory, if employees perceive that adopting behaviors aligned with organizational objectives is both beneficial and socially endorsed, it is more probable that they will engage in such behaviors.

Conversely, the Individual Theory of human society underscores the importance of social relationships and cultural norms as fundamental factors that shape individual behavior. This framework advocates for the establishment of an organizational culture that fosters collaboration, emphasizing learning and innovation. The integration of these theories with competency frameworks within the Human Resource Development systems of small-sized enterprises will offer an enhanced strategy essential for sustaining organizational growth while addressing the social dimensions. This comprehensive perspective not only ensures improved employee performance but also cultivates a deeper connection to the organization, ultimately contributing to enduring growth and success.

2.2 Theory of Reasoned Action and its Implications

The *Theory of Reasoned Action (TRA)*, developed by (Ajzen, 1991), serves as a pivotal psychological construct that elucidates human behavior through the lens of intentions, which are shaped by both attitudes and subjective norms. This theoretical framework bears significant ramifications for Human Resource Management (HRM), particularly within small-scale enterprises, wherein employee engagement, skill enhancement, and congruence with organizational objectives are paramount for achieving success. Through the comprehension and implementation of TRA, small enterprises are positioned to formulate HR strategies that cultivate favorable behavioral intentions, augment employee performance, and propel organizational advancement.

2.2.1 Theoretical Foundations of TRA

TRA posits that an individual's conduct is a manifestation of their intention to engage in that specific behavior, which is subsequently shaped by two primary determinants:

Attitudes: An individual's evaluative judgment regarding a behavior, which can be either positive or negative. For example, if employees acknowledge that the enhancement of their competencies can significantly contribute to their professional development, they are more likely to engage in training initiatives. These attitudes play a pivotal role in shaping employees' interactions with competency frameworks. This ensures that when employees perceive skill development as beneficial and pertinent to their career objectives, their likelihood of actively participating in training programs increases correspondingly. Conversely, should employees regard competency development as trivial or burdensome, their willingness to engage may diminish, thereby undermining the overall effectiveness of the framework.

Small enterprises must effectively articulate the advantages of competency development to foster affirmative attitudes. For instance, organizations can underscore the benefits associated with training programs that pertain to career progression, job security, and personal growth. Empirical research conducted by (Noe, 2014) indicated that employees who viewed competency development as a vehicle for career advancement were 30% more inclined to engage in training programs compared to those who perceived it merely as a compulsory obligation.

Furthermore, incentive programs may be leveraged by organizations to cultivate more favorable attitudes as well. Financial bonuses, recognition awards, or opportunities for career advancement may incentivize employees to actively participate in competency development endeavors.

A) **Subjective Norms**: The perceived social expectations to either partake in or refrain from specific behaviors. Within the workplace, subjective norms are established by the attitudes and actions of colleagues, managers, and organizational leaders. For instance, if employees perceive a collective expectation from their peers and supervisors regarding the advancement of competencies, they are more likely to exhibit behaviors that align with the established framework. Conversely, if employees sense that their social environment does not provide them with support or encouragement in the pursuit of competency development, their propensity to engage in such activities diminishes significantly. Consequently, organizations must endeavor to cultivate a culture of learning and collaboration, wherein competency development is regarded as a collective obligation and a fundamental driver of organizational success.

   In this context, a crucial strategy for influencing subjective norms is the modeling of desired behaviors by leadership. By having managers and supervisors actively participate in training programs, the significance of continuous learning is reinforced among employees. For instance, a small technology startup implemented a leadership development initiative that involved senior managers attending the same training sessions as their teams. This approach fostered a learning-oriented environment, thereby enhancing trust and collaboration between employees and their leaders. Peer mentoring represents an additional strategy, fostering a supportive social milieu in which employees can learn from one another. Peer mentoring is particularly effective within small-sized enterprises, where team dynamics tend to be closely interconnected.

In smaller industries where teams are more likely to be small and mixed, peer mentoring can be especially useful. A small-sized manufacturing company, for instance, pioneered a buddy system, pairing seasoned employees with new hires to foster knowledge sharing and skill development. As a result of this initiative, onboarding time was reduced by 25% and employee retention improved by 15% (Zacca and Dayan, 2018).

B) **Behavioral Control**: Behavioral control pertains to one's perception of behavior execution difficulty. *Potential MR Partnerships* for addressing employee training concerns include collaborations with *Skill Development Centers*, industry leaders, and companies with robust training programs to enhance knowledge exchange. This mechanism manifests through attitudes and subjective norms.

The Theory of Reasoned Action (TRA) aids in motivating employees in small industries to engage in competency development, aligning their actions with organizational goals. This fosters a culture of continuous improvement, contributing to organizational success and enhancing competitive advantage.

Table 2.1 Key Constructs of the Theory of Reasoned Action and Their Implications for Small-Sized Industries

Construct	**Definition**	**Implications for Small-Sized Industries**
Attitudes	An individual's positive or negative evaluation of a behaviour.	Small businesses must communicate the benefits of competency development to foster positive employee attitudes.
Subjective Norms	The perceived social pressure to perform or not perform a behaviour.	Leaders and peers should model desired behaviours to create a supportive social environment.
Behavioural Intention	The likelihood that an individual will perform a specific behaviour.	Organizations can use incentives and recognition programs to strengthen employees' intentions to participate.
Behaviour	The actual performance of the behaviour.	Aligning employee behaviour with organizational goals drives productivity and innovation.

2.2.2 Integrating TRA with AI-Driven Competency Frameworks

Implementing AI-TRA-based interventions has the potential to significantly benefit numerous small-sized enterprises. Data-driven insights can elucidate employee attitudes and behaviors through AI-based methodologies, thereby assisting organizations in devising more effective competency development programs. The following delineates methods through which AI can enhance TRA-based interventions:

a) **Personalized Learning Pathways**: Platforms driven by artificial intelligence can autonomously extract and evaluate data regarding employee performance, facilitating the construction of tailored learning trajectories that align with individual aspirations as well as organizational requirements. For instance, an AI-enhanced learning management system (LMS) can recommend suitable training modules based on an employee's skill deficiencies and professional objectives.

b) **Predictive Analytics of Skill Deficiencies**: By harnessing predictive analytics, AI can scrutinize and assist in identifying potential skill deficiencies prior to their escalation into critical issues. AI tools have the capability to discern trends by evaluating employee performance metrics in relation to market exigencies, thereby forecasting which competencies are likely to be of paramount importance in the future, thus enabling small-sized industries to proactively address skill gaps through targeted training initiatives.

c) **Real-Time Feedback and Reinforcement**: Tools underpinned by artificial intelligence can furnish employees with instantaneous feedback in real-time, thereby reinforcing affirmative behaviors while rectifying detrimental ones. For example, an AI-driven coaching platform can evaluate an employee's performance during a simulated task and provide immediate guidance for enhancement.

2.2.3 Implementation of TRA in Small-Sized Industries

The application of TRA theory in forthcoming endeavors can yield substantial insights by employing strategies that rapidly respond to organizational behaviors concerning attitudes and subjective norms, particularly within small-sized enterprises. Below are several recommendations to achieve improved outcomes:

a) Communication and Awareness Campaigns: Collaborate with competency development proponents to localize initiatives through internal newsletters, workshops, and town hall meetings aimed at promoting the advantages of competency development and disseminating success narratives.

b) Leadership Role Modeling: Create opportunities for managers and supervisors to engage in training programs; senior management should exemplify their dedication to ongoing learning.

c) **Peer Mentoring & Social Learning**: Initiate programs centered on peer mentoring to cultivate a shared social environment in which employees can learn collaboratively.

d) **Incentive Programs**: Implement incentive mechanisms, such as financial rewards, recognition accolades, or promotional opportunities within the organization, for employees who actively engage in training initiatives. The Theory of Reasoned Action (TRA) provides a powerful framework for understanding and influencing employee behavior in small-sized industries. By addressing attitudes and subjective norms, organizations can create a supportive environment that encourages skill development and aligns workforce capabilities with organizational goals. The integration of AI technologies further enhances the effectiveness of TRA-based interventions, enabling small-sized industries to adopt a proactive approach to talent management.

Through targeted communication, leadership role modeling, peer mentoring, and incentive programs, small businesses can foster a culture of continuous learning and adaptability. By overcoming challenges such as resistance to change and resource constraints, organizations can build a resilient workforce capable of navigating challenges and seizing opportunities in an ever-evolving structure of industry.

2.3 Human Society Theory in Human Resource Context

Human-Society Theory advocates for an integrated perspective to elucidate human conduct, accentuating the interdependence between individuals and their social milieu. Whereas the Theory of Reasoned Action (TRA) is entrenched in the cognitive psychology of individual forces within the psyche, the Human-Society Theory underscores the significance of social relationships, cultural paradigms, and external determinants in behavioral choices. Small-scale enterprises frequently depend on cohesive social networks and informal organizational structures.

2.3.1 Theoretical Roots of Human-Society Theory

As posited by the Human-Society Theory, human conduct should not be perceived as an isolated phenomenon; rather, the personal attitudes and convictions of individuals are contingent upon the encompassing social and cultural milieu in which they are situated (Lynham and Cunningham, 2006). The theory elucidates that comprehending the broader societal context of organizations necessitates an examination of organizational culture, cultural paradigms, and the impact of external phenomena, including economic and technological transformations.

Such deliberation constitutes the foundation of the subsequent theory that correlates competency to context, namely the Human-Society Theory, which provides insights into competency application within a Human Resource Management (HRM) framework and the context in which an organization finds itself; with context being a specific focus on the social fabric during competency design and execution. For instance, in small-scale enterprises where employees cultivate close relationships with one another and collaborate in teams, the social dynamics of the workplace play a pivotal role in determining the efficacy of HR practices.

2.3.2 Impacts of Human-Society Theory on Competency Framework Development

Impact of Human-Society Theory on Small-Sized Industry Specifications in their Competency Frameworks.

A) **Organizational Culture**: The culture prevalent within an organization profoundly influences the manner in which employees approach competency advancement and development. In small-scale enterprises, the owner-manager frequently shapes organizational culture with specific values and leadership styles, necessitating that the competency framework be congruent and aligned with the cultural paradigms of the organization. A culture of collaboration and continuous enhancement, for instance, is significantly more likely to facilitate the successful execution of competency frameworks.

B) **Societal Norms**: The overarching societal norms within which an organization operates also affect its Human Resource Development (HRDD) practices. For example, if employees are engaged with international organizations that possess a global cultural outlook, they may pursue educational and skills training opportunities. Conversely, in societies governed by traditional hierarchies and rigid social structures, employees may exhibit a diminished inclination to engage in competency development initiatives.

C) **External Influences**: Transformations in the external environment, including fluctuations in the economy, technology, and regulatory frameworks, can similarly impact the pertinence of competency frameworks. Consequently, the integration of Artificial Intelligence (AI) and digital technologies within organizations has engendered new learning requirements for employees,

necessitating the construction of competency frameworks in alignment with these evolving needs.

Table 2.2 Key Elements of Human-Society Theory and Their Implications for HRM

Key Elements	Human- Society Theory	Element Definition Implications for HRM in Small-Sized Industries
Organizational Culture	The shared values, beliefs, and practices that shape behaviour within an organization.	Align competency frameworks with cultural norms to foster employee engagement and support for skill development.
Societal Norms	The unwritten rules and expectations that govern behaviour in a society.	Consider societal attitudes toward education and skill development when designing training programs.
External Influences	Factors outside the organization that impact its operations and strategies.	Adapt competency frameworks to address emerging trends such as AI adoption and digital transformation.
Social Relationships	The interpersonal connections and networks that influence individual behaviour.	Leverage peer mentoring and collaborative learning to enhance the effectiveness of competency frameworks.

2.3.3 Competency Framework Development for HR in Small-Sized Industries

In diminutive-sized industries, the formulation of competency frameworks should take into account the sociocultural essence of the organizations as established (accumulated or evolved); however, sociocultural aspects are perceived as nebulous phenomena

concerning the differentiation of one firm from another. In contrast, larger enterprises possess specialized human resources divisions and standardized methodologies, whereas small-sized industries operate with constrained resources and informal frameworks. This necessitates a more nuanced and context-sensitive approach to the development of competency frameworks. A small-sized manufacturing enterprise in India, for instance, effectively instituted a competency framework by contextualizing the cultural norms of their nation and organizational values in the architecture of the framework itself. Animalist convened focus group discussions with employees to ascertain pivotal competencies and engaged in peer mentoring to facilitate the dissemination of knowledge and enhancement of skills.

2.3.4 Research Question: AI's Role in Evaluating Personnel Suitability and Performance

Competency frameworks present significant prospects in their evaluation with Artificial Intelligence (AI). For the optimization of talent management decisions, AI-driven instruments can scrutinize extensive volumes of employee data to discern patterns and trends, thereby enabling organizations to make more enlightened decisions. One illustration would be how IBM Watson Talent Frameworks—an AI-empowered software—discerns employee performance and generates personalized development programs, which mitigates the expenditure of time and resources associated with conventional assessment models. Nonetheless, the application of AI in diminutive-sized industries encompasses challenges. As is widely acknowledged, the utilization of AI-driven competency frameworks may prove problematic due to resource limitations, insufficient technical acumen, and resistance to transformation. To ameliorate such

challenges, organizations must concentrate on training and education to cultivate AI competence among employees and management.

2.3.5 The Impact of HR Competence Models in Small-Scale Industry Strategy Alignment

They constitute a pivotal component in aligning the capabilities of the workforce with the intended strategy of the organization. Given that small-scale industries typically possess limited resources, it is essential to develop HR practices that are congruent with business objectives. One small-sized IT enterprise in Malaysia, for example, depended on a competency framework to identify deficiencies in skills and determine pertinent training and development, tailored to its strategic objectives. As a result, employee performance was augmented by 25% and customer satisfaction improved by 30% (Ibrahim, Abdullah and Ismail, 2016).

2.3.6 Literature on HR Competencies and AI Integration

Data has demonstrated that AI-enabled competency frameworks can enhance recruitment efficacy (Tambe, Cappelli, & Yakubovich, 2019). employee engagement, and organizational performance. Nevertheless, the extant literature also underscores the necessity of addressing ethical considerations, including algorithmic bias and data privacy, to ensure the ethical application of AI within HRM.

2.3.7 Hypotheses on the Efficacy of Competency Framework Development Models

The efficacy of competency framework development models can be evaluated through the following hypotheses:

Hypothesis 1: The implementation of competency frameworks in small-sized industries will lead to significant improvements in employee performance and organizational outcomes.

Hypothesis 2: The integration of AI into competency frameworks will enhance the accuracy and efficiency of personnel evaluation and development.

Hypothesis 3: Competency frameworks that align with organizational culture and societal norms will be more effective in driving employee engagement and retention.

2.3.8 Cost and Time Efficiency Gains from Competency Model Implementation

For industry of diminutive scale, competency models can culminate in reductions in time and cost. By mechanizing competency evaluations through AI-facilitated instruments, organizations can conserve both time and resources by obviating labor-intensive manual assessments.

2.3.9 The Influence of Competencies in Industries with and without HR Departments

Competency Influence by Sector: Formal HR Department vs Absence of Formal HR Department In organizations possessing HR departments, these documents are generally considerably more systematic, originating from established policies and standards, and lead to substantially more uniform outcomes. Conversely, the practices within sectors devoid of human resources departments may adopt an informal methodology that does not engender uniformity in the application of competency frameworks. Nevertheless, through peer mentoring, role modeling, and AI instruments, considerable advancements can be achieved in a small-scale industry lacking HR departments.

2.4 Additional Theoretical Frameworks

Various theoretical constructs such as *Social Learning Theory*, *Resource-Based View* (RBV), and *Technology Acceptance Model* (TAM) are considered to augment the theoretical foundation that underpins this research. These frameworks provide methodologies for the development and implementation of competency frameworks within small-scale industries.

A) **Social Learning Theory:** The Social Learning Theory, proposed Albert Bandura (1977) underscores the examination of observed behaviors or actions of others, accentuating the significance of observation, imitation, and modeling. The Social Learning Theory is one of the theoretical constructs positing that in a HRM context, employees acquire new competencies and behaviors through the observation of peers and leaders. For instance, a SSI established a peer mentoring framework wherein seasoned employees exemplified best practices to novice employees. This approach significantly facilitated expeditious skill acquisition while simultaneously fostering a collaborative work milieu

B) **Resource-Based View (RBV):** The *Resource-Based View (RBV)* posits that organizations attain competitive advantage by optimizing their unique resources and capabilities. Human resources are deemed the most invaluable asset in small-scale enterprises. With this understanding, small businesses can prioritize and support their personnel by devising competency frameworks that promote human capital development in alignment with the organization's strategic aims. An illustrative instance of this in practice involves a small IT firm that employed a competency framework to identify and cultivate

specialized technical proficiencies, enabling the organization to differentiate itself in a saturated market.

C) **Technology Acceptance Model (TAM):** The Technology Acceptance Model (TAM), developed by Davis (1987) addresses user adoption and engagement with novel technologies. This underscores the significance of perceived utility and usability within the context of AI-driven competency frameworks, as delineated in technology acceptance models (TAM). An example of this is a small-scale healthcare provider that invested in an AI-based educational platform and orchestrated sessions to demonstrate its benefits. This initiative culminated in a 40% increase in employee adoption rates and considerable advancements in skill enhancement and job performance.

Table 2.3 Summary of Additional Theoretical Frameworks

Theory	**Key concept**	**Implications for Small-Sized Industries**
Social Learning Theory	Observation, imitation, and modelling.	Peer mentoring and collaborative learning can enhance skill development.
Resource-Based View	Leveraging unique resources for competitive advantage.	Competency frameworks should align with organizational goals to maximize human capital.
Technology Acceptance Model	Perceived usefulness and ease of use.	Employee training and support are critical for successful AI adoption.

2.5 Case Studies of Competency Framework Implementation

Competency frameworks are not merely theoretical constructs; their pragmatic application has been effectively evidenced in diminutive industries as well. These instances exemplify the obstacles, methodologies, and outcomes associated with the development of competency frameworks.

2.5.1 Case Study 1: Small-Sized Manufacturing Firm in India

In India, there exists a case of a minuscule manufacturing enterprise where the necessity was recognized to establish a competency framework aimed at addressing the deficiency in skills and enhancing the performance levels of the workforce. The firm also facilitated employee focus group discussions to identify essential competencies and utilized AI-based analytics to assess skill levels.

2.5.2 Case Study 2: Small-Sized IT Firm in Malaysia

In Malaysia, a small-sized IT enterprise employed the competency framework to align employee competencies (skills, knowledge, principles, and attitudes) with its strategic objectives. The firm devised AI-based tools to autonomously evaluate competencies and provide instantaneous feedback.

2.5.3 Case Study 3: Small-Sized Retail Chain in the USA

A medium-sized retail chain in the USA instituted a competency framework to augment engagement and retention. The framework comprised incentive programs, modeled leadership behaviors, and personalized learning platforms powered by AI. Consequently, the organization witnessed a 40% increase in training participation and a 25% enhancement in employee morale (Midhat Ali *et al.*, 2021).

Table 2.4 Summary of Case Study Outcomes

Case study: Sector	Productivity Improvement Employee	Performance Improvement Employee	Engagement Improvement
Case Study 1 (Manufacturing Firm)	25%	15%	20%
Case Study 2 (IT Firm)	30%	20%	25%
Case Study 3 (Retail Chain)	40%	25%	30%

Table 2.5 Summary of Key Studies on Competency Frameworks and AI in HRM

Author	Topic	Study Focus Key Findings
Ulrich (2008)	HR Competency Model	Competency frameworks improve HR alignment with organizational goals.
Tambe et al. (2019)	AI in HRM	AI enhances recruitment, training, and performance management.
Zacca & Dayan (2018)	Small-Sized Industries	Flexible and context-specific frameworks improve employee performance.

In other words, competency frameworks must be congruent with organizational culture, societal conventions, and external factors, the findings indicate. By selecting diminutive and flexible, context-sensitive frameworks, small- sized organizations are impelled towards significant enhancements in the efficacy of employees as well as the organization in its entirety. Future investigations can concentrate on the periodic influence of these competency frameworks on organizational efficacy and the requisites for emergent technologies such as AI in rendering these frameworks more efficacious.

2.6 Summary

All these competitive advantages of small-sized industries follow to conclude that these businesses models and practices of HR will change under the influence of Human-Society Theory. Organizations can create relevant and effective competency frameworks by recognizing the interaction of individual behaviors, organizational culture, social norms, and external influences. This involves the further gain of AI industries that leverage competency frameworks through small-sized industries increasing employee performance, alignment to the organization, and cost efficiency.

Drawing on both theoretical perspectives and practical approaches, small-sized industries can build a workforce that is resilient and adaptable, ready to thrive in the face of shifting challenges and new opportunities in an increasingly dynamic business environment.

CHAPTER III:

METHODOLOGY

3.1 Overview of the Research Problem

To improve HR competency models for small-scale industries, customization, simplification, automation, alignment with business objectives, and a focus on soft skills were considered. These improvements helped drive growth and success for small-scale businesses. Tjahjadi *et al.* (2022) studied whether human capital affects business performance by using quantitative study and survey methods, which showed results had a direct and positive effect on business performance. This study embraced a *positivist research philosophy*, with the goal of impartially examining and evaluating the progression of the Competency Framework for Human Resources in small-scale industries. To attain a comprehensive comprehension of the subject, For further improvisation in terms of geographical and industry size, a mixed methodology of Qualitative and Quantitative methods was used via Semi interviews and behavioral interviews of human resources (Tzafrir, 2006). Although, the online survey-based collection of Quantitative data where the majority of the respond is concentrated. In the endeavor to formulate a Competency framework, the culminating output was derived for the perspectives of small-scale industries by approaching all 4 levels of management in SSI, like owners, highly skilled professionals, human resources, and managers.

Furthermore, to explore the competency in Small- industries where the labor work was more, who were mostly unskilled but had prowess in their work, the solicitation of insights from Human Resource professionals was undertaken to ascertain the essential competencies deemed requisite within the prevailing contemporary landscape, considering the prominent trajectory of artificial intelligence trends. An

abductive approach was employed, recognizing the iterative process of data collection and theory development.

This exploration delved into the methodology employed to investigate the impact of Competency Framework Development (CFD) models on personnel evaluation, adaptability, performance, and cost-effectiveness within small-scale industries (SSIs). It further examined the potential influence of Artificial Intelligence (AI) on these factors and explored potential differences in competency measurement between SSIs with and without dedicated HR departments. This research framework adhered to rigorous standards, ensuring the validity and reliability of the findings.

3.2 Operationalization of Theoretical Constructs

a) Competency Framework Development (CFD):

CFD is a structured process for identifying and defining key skills and behaviors required for effective performance in specific organizational roles (Campion *et al.*, 2011). This research took advantage of established systems and showed to build an in-depth understanding of CFD criteria and their usefulness in SSIs.

b) Personnel Evaluation:

Personnel evaluation referred to the systematic assessment of employee suitability, adaptability, and performance against established criteria and competencies (Pickett, 1998) . This paper examined the degree to which CFDs possibly increase devaluation precision and dependability, considering the possibility of incorporating AI in order to further improve efficiency.

3) Adaptability:

Adaptability referred to the ability of individuals and organizations to adjust to dynamic market demands and evolving business environments (Stauffer et al., 2014). This research investigated how CFDs can facilitate organizational and individual adaptability within the context of SSIs.

c) Performance Improvement:

Performance improvement involved implementing structured interventions like training and development programs tailored to identified competency gaps (Guthrie, 2001). This research explored how CFDs informed and guided effective performance improvement initiatives are within SSIs.

d) Cost Reduction and Time Savings:

This research examined the potential of CFDs to contribute to cost reduction in personnel-related activities (recruitment, training, development) and time savings in tasks like performance management and employee development (Mccormick, 1999).

e) Artificial Intelligence (AI):

AI referred to technologies that simulated human intelligence and automated tasks (Chen *et al.,* 2021). This research explored the potential of AI to enhances the effectiveness of CFDs in various aspects, including data analysis and personalized learning.

3.3 Research Purpose and Questions

This study endeavors to ascertain the impact of CFD models in SSIs through the following research questions:

RQ1: To what extent did implementing a CFD model in SSIs improve to the personnel evaluation, suitability, adaptability, and performance with AI integration?

RQ2: How did the competency models affect cost and time efficiency in personnel placement and development?

RQ3: Was there a significant difference in the measurable impact of competencies on workers between SSIs with and without dedicated HR departments?

3.4 Research Design

The study employed an *Explanatory sequential model*, and the research design entailed a two-phase approach. Commencing with the quantitative phase, erudite participant's data were collected via a Google Form survey to furnish a comprehensive overview concerning the prevalence and perceived efficacy of competency frameworks within the domain of small-scale industries. Subsequent to this, the qualitative phase involved the acquisition of data through open- ended online questionnaire through Google form, thereby facilitating a profound exploration of the intricate facets encompassing experiences, obstacles, and determinants of success linked to the competency framework development.

This research employed an explanatory sequential mixed-methods design, combining quantitative and qualitative approaches to gain a comprehensive understanding of the phenomenon (Toyon, 2021). The study unfolds in two distinct phases:

Phase 1: Quantitative Survey

a) **Data Collection**: A structured online survey was distributed via Google Forms with a combination of Likert scales and Multiple- choice questions to capture quantitative data.

b) **Data Analysis**: Statistical analysis using appropriate software SPSS was used for descriptive statistics, inferential relationships, and the quantitative impact of CFD on the identified variables.

Phase 2: Qualitative Survey

a) **Data Collection**: Utilizing a narrative inquiry framework, this research gathered vua a brief, web- based survey with open- ended questions, distributed through Google Forms , to explore a narrative inquiry approach to explore individual experiences and perspectives from professional HR's.

b) **Data Analysis**: Thematic analysis was applied in software and manual coding done to identify recurring themes and delve into the nuances related to success factors in CFD development and its impact within SSIs.

3.5 Population and Sample

1) **Target Population**: Small-scale industries owner, HR, Manager, and those who contribute to the employee experience across diverse sectors in major metropolitan cities.

2) Sampling Techniques:

a) Quantitative Phase: Stratified random sampling within clusters to ensured representativeness across sectors and locations. A *stratified within cluster random sampling* technique was used to ensure representation across different sectors and

geographic locations of small-scale industries. The sample size was determined based on statistical considerations, aimed for a representative dataset.

b) Qualitative Phase: Purposeful sampling based on expertise and experience in CFD development and application within SSIs. The participants for the interviews were selected through purposeful sampling. Participants were chosen based on their expertise and experience in competency framework development within industries. The sample size was guided by data saturation, where new information ceases to emerge.

3.6 Participant Selection

Phase 1: Quantitative Survey

Participants: A representative sample of individuals from SSIs across diverse sectors and geographical locations was drawn to ensure generalizability.

Phase 2: Qualitative Interviews

Participants: HR professionals were selected based on their CFD experience in developing of the application within SSIs, ensuring in-depth insights.

3.7 Instrumentation

1) Quantitative Phase:

An authorized and dependable investigation was included for demographics, CFD recognitions, potential AI integration, HR practices and open-ended criticism sections. Pre-testing and pilot testing was undertaken to ensure clearness, integrity and authenticity.

2) Qualitative Phase:

A online Google Form guide with open-ended questions focused on experiences, challenges, and factors influencing success in CFD development and implementation within SSIs.The guide was piloted and refined based on expert feedback to ensure its effectiveness (Flick, 2015).

3.8 Data Collection Procedures

In this section, Different methods were used to search and investigate the potential of a competency framework to enhance HR practices within small-scale industries (SSI). Online academic databases, such as SSBM EBSCO, Google scholar and Research Gate, Journals and more, were utilized to search for peer-reviewed journal articles and research reports addressing HR practices, competency frameworks developed model, and challenges specific to SSIs. Relevant search terms included: "HR practices in small-scale industries," "competency frameworks and SSI," AI Implementation for HR and "challenges of implementing competency frameworks in SSIs.

The Inclusion Criteria while selecting documents adhered to the following criteria:

a) **Relevance**: The document directly addressed HR practices, competency frameworks, or challenges relevant to the research topic and SSIs.
b) **Credibility**: The source of the document stemmed from reputable and reliable entities, such as peer-reviewed journals, established industries.
c) **Timeliness**: The publication date ensured access to information, typically focusing on the current as well as the past research papers.

Thereafter, a mixed-methods approach was needed for fulfilling the study objectives and collecting comprehensive data.

First, Google Survey Form was distributed to SSI, including HR personnel, owners, managers, employees and workers. This survey had gathered insights into their current competency levels, areas for improvement, challenges they face, and the perceived need for a formal competency framework. The design of the survey was specifically prepared to address the research questions and test of hypotheses.

Following the survey results, a questionnaire was prepared for gathering the insight knowledge and views of the highly professional HR and it was send via social platforms (LinkedIn, Whatsapp) and Mail. The questionnaire delve deeper into the potential benefits and implementation considerations of a competency framework for SSIs. They explored how such a framework might optimize areas like recruitment, performance management, and training and development.

Combining quantitative survey data with the qualitative perspectives gleaned from semi- structured interview though Mail and Google Forms, Messaging were offered a holistic understanding. This was supported for the development of a competency framework that is both data-driven and grounded in the practical realities of small-scale industries. A Competence and *Behavioral-based questionnaire* was used for data collection. A structured questionnaire comprising 5 interview questions for the qualitative survey and 40 questions for the quantitative survey was distributed to participants, ensuring alignment with the study's objectives and achievability for small-scale industries.

Analysis of referred Research Paper, Journal, Articles:

A systematic review of the selected documents was conducted to glean insights relevant to the research question by prevailing HR practice identifying the most commonly employed competency framework for HR practices within SSIs, with particular emphasis on recruitment, performance management, and training and development, AI for HR.

This established a baseline understanding of existing practices, informing the research into potential improvements through competency frameworks.

Uncovering documented challenges and potential shortcomings in current HR practices within SSIs, specifically regarding the implementation of competency frameworks. This included seeking insights into resource limitations, expertise gaps, and any specific difficulties encountered during framework implementation and most importantly competency framework for SSI. Identifying these challenges informed the research by highlighting areas where a competency framework for HR in small-scale industries (SSIs) could address existing limitations, particularly those arising from high operational costs.

Also, utilizing the findings from the document analysis to directly inform the development of semi-structured interview questions. By understanding the current landscape of HR practices and the potential challenges related to competency frameworks within SSIs, the interview questions could be tailored to delve into relevant areas and gather deeper insights from participants. This ensured that the interviews effectively explored the research topic and its specific context.

3.8.1 Quantitative Phase:

The survey is *exploratory and deductive*, investigating the prevalence and effectiveness of competency frameworks incorporating carefully *constructed structured survey* was distributed among diverse participants. While the research initially projected a collection of approximately 150 fully completed responses, resulting in a good response rate of 129. This *inclusive approach* extends to cover both small-scale industries with established HR departments and those without, as well as large companies in corresponding scenarios. By adopting this comprehensive strategy, the research aimed to elucidate the

competencies that may be needed within the small-scale industry context, while also spotlighting any contrasting qualities prevalent in bigger corporate industries. The data buffet should be spread throughout a big population. The survey questions are intended to be used in a heterogeneous setting, where the target responder was varied of gender, educational background, various professions, and various ethnicities.

This research engaged a comprehensive questionnaire design comprising of Demographic Information, participants data were collected regarding their roles, experience, and organizational context. Competency Assessment were used to explored perceptions and evaluations of competency frameworks, AI integration, and HR practice. Employee Level Differentiation investigated the potential variations in responses based on employee levels. AI Implementation and Competencies assessed to perceived impact of AI on HR competencies and practices. The answering scale was a combination of *Likert scales* and *Multiple- choice based responses* to allow for *nuanced feedback*. Likert scales was ranged from strongly disagree to strongly agree, providing quantifiable data for analysis. Rating scale from Rate 1 to Rate 5 for full questionnaire (Refer Appendix). Online survey distribution through relevant channels and data collection platforms, ensured accessibility and ethical data collection practices. Informed consent was obtained from all participants, and data was anonymized and stored securely.

3.8.2 Qualitative Phase:

To gain a nuanced understanding of the potential benefits and practical considerations associated with implementing a competency framework within small-scale industries (SSIs). Semi-structured interviews were performed with a deliberately chosen cohort of participants. Building upon insights gleaned from the Google Survey, these interviews

were employed open-ended questions to encourage participants to discern their perspectives and experiences concerning current HR practices, competency gaps, and the perceived value of a formal competency framework. Qualitative quetionnaire includes, comptency model & AI in HR, Impact on cost and time reduction, challenges and adaptability to AI in HR, Future of AI and Competency framework. (Refer appendix).

This approach allowed for in-depth exploration, potentially uncovering previously unknown aspects of how a competency framework could address the specific challenges faced by SSIs. Following informed consent protocols and ensuring data security, the interviews was approached depending on participant preference. The option of online interviews caters to geographical spread and accessibility concerns, while in-person interviews can foster deeper connection and richer contextual understanding. Semi-structured interviews using a narrative inquiry approach was conducted with a purposefully selected group of participants, the survey respondents with size of 10 highly professional HR's.

3.9 Data Analysis

1) Quantitative Phase: Survey data were analyzed quantitatively using relevant statistical approaches such as descriptive statistics and inferential analysis. This study give quantitative data on the frequency and impact of competence frameworks. The data were analyzed using statistical software for coding, and the results were evaluated using Statistical Package for Social Sciences (SPSS) version 29.0. 21.1.0. Descriptive statistics summarized key characteristics of the sample and responses. Hypothesis testing of relationships between CFD implementation and the variables identified were tested via

inferential analysis (e.g., regression, ANOVA). The statistical methods was appropriate for the data collection and the research questions.

2) Qualitative Phase: The semi-structured interviews were transcribed verbatim and analyzed using thematic analysis. This approach allowed for the identification and exploration of recurring themes related to success factors in competency framework Development. Project Management Software (PMS) was used to help organize and categorize themes and insights generated from interviews during the qualitative data analysis.

Thematic analysis was conducted employing software or manual coding techniques to retrieve recurring themes, patterns, and significances. Coding was guided by the research questions and refined iteratively throughout the analysis process.

3.10 Research Design Limitations

Possible limitations included the potential for response bias in the quantitative survey phase and the subjectivity inherent and bias in qualitative analysis. Generalizability was restricted due to the specific focus on small-scale industries. This research design incorporated several strategies to ensure the rigor and trustworthiness of the findings, including:

A. **Triangulation**: By combining quantitative and qualitative data to gain a comprehensive understanding of the phenomenon.
B. **Member Checking**: After semi- structured interview an interview transcripts will be shared with participants for verification and refinement of interpretations.
C. **Pilot Testing**: To ensure iterative process of survey instrument was subjected to refinement, wherein a preliminary sample was utilized to evaluate and improvise the questionnaire design and content.

D. **Transparency**: The research methodology report's comprehensive details to ensure transparency, allowing for critical evaluation and replication.

3.11 Limitation

This study faced certain limitation. The generalizability of findings may be limited due to the focus on SSIs within specific geographical regions Self-reported data in the survey phase may be subject to bias The subjective nature of qualitative data analysis may limit its generalizability.

Moreover, these limitations go beyond only adequacy of data collection; they also highlight the need for a more sophisticated interpretation of findings. For example, while self-reported data can summarize individual experiences accurately enough. This matters especially when consider that generalizability is typically measured through quantitative methodologies with a focus on larger numbers of samples, in order to replicate findings across different contexts (Ercikan, 2009). As a result, further studies might want to consider mixed methods that can combine qualitative perspectives with more powerful quantitative analysis, ultimately boosting understanding of SSIs and leading to generalizability across different geographical and demographic contexts.

3.12 Conclusion

This chapter presents a comprehensive and rigorous research methodology for investigating the impact of Competency Framework Development (CFD) models on small-scale industries (SSIs). The study sought to reveal findings on the potential role and effectiveness of CFDs to improve personnel evaluation, adaptability, performance and cost efficiency, as well as the prospective role of AI within this process through quantitative and qualitative approaches. Additionally, the research explored potential

differences in competency measurement approaches between SSIs with and without dedicated HR departments. Overall, this study adds to the body of knowledge by filling a previously overlooked gap in the literature regarding the importance of CFDs in impacting SSIs for organizational performance in an era defined by rapid change and competition.

CHAPTER IV:

RESULTS

4.1 Research Question One: To what extent did implementing a CFD model in SSIs improve to the personnel evaluation, suitability, adaptability, and performance with AI integration?

Analysis of Demographic Characteristics of Respondents

A total of 129 respondents participated in the research, comprising 73 males and 56 females. Table 4.1, describes the sample distribution by age. Among the respondents, a notable 51.9% are millennial (ages 18-34), indicating a strong presence of younger participants. In contrast, the Gen X group (ages 35-54) accounts for 38.0%, while the boomer generation (ages 55-64) represents 10.1%.

Table 4.1 Sample Distribution by Age and Gender

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	73	56.6
	Female	56	43.4
Age	18-34 (Millennial)	67	51.9
	35-54 (Gen X)	49	38.0
	55-64 (Boomer)	13	10.1

Table 4.2, outlines the distribution of respondents based on organizational size, role in the company, and years of experience. The data reveals that 28.8% of respondents work in small-scale industries, while 25.6% are employed in large organizations. Regarding roles

within the company, Workers/Employees constitute the largest group at 30.2%, followed by Highly Professionals at 25.6%.

Table 4.2 Sample Distribution by Organization Size, Role, and Years of Experience

Demographic Variable	**Category**	**Frequency**	**Percentage (%)**
Size of Organization	Micro-Enterprise	29	22.5
	Small-Scale Industry	37	28.8
	Medium-sized Industry	30	23.3
	Large-sized Industry	33	25.6
Role in the Company	Owner/Founder	24	18.6
	Highly Professional	33	25.6
	Human Resources	21	16.3
	Workers/Employees	39	30.2
	Others	12	9.3
Years of Experience	Less than 1 Year	25	19.4
	1-3 Years	29	22.5
	4-6 Years	24	18.6
	7+ Years	51	39.5

Overall, the sample includes a diverse range of experience levels, with 39.5% of respondents having over seven years in their respective fields. This rich demographic mix contributes valuable perspectives that enhance the depth of the research findings.

4.1.1 Research Question 1 (RQ1): The Role of Competency Framework

Development in Personnel Evaluation and Performance Improvement with AI

This section presents the findings related to Research Question 1, focusing on how Competency Framework Development (CFD) models help evaluate personnel suitability, adaptability, and improve performance in small-sized industries through the integration of AI.

Respondents were asked to rate their familiarity with Competency Framework Development (CFD) within Human Resource Management. The Table 4.3, below summarizes their responses:

Table 4.3 Familiarity with Competency Framework Development in HRM

Familiarity Level	Frequency	Percent	Cumulative Percent
Not Familiar	24	18.6%	18.6%
Somewhat Familiar	43	33.3%	51.9%
Moderately Familiar	31	24.0%	76.0%
Very Familiar	31	24.0%	100.0%
Total	**129**	**100.0%**	**100.0%**

A significant proportion of respondents (33.3%) indicated a moderate level of familiarity with Competency Framework Development (CFD). While a smaller group (24%) expressed a higher level of familiarity, a substantial number (18.6%) reported being unfamiliar with the concept altogether. These findings suggest that while CFD is gaining recognition within the HR community, there remains a need for further awareness and understanding of its practical applications. Earlier research has demonstrated similar

trends, showing considerable differences in how familiar professionals from diverse fields are with competency frameworks (Midhat Ali and Mohsin Qureshi, 2021).

Table 4.4 Age: Competency Framework Development familiarity in the field of Human Resource Management Cross tabulation

		Competency Framework Development familiarity in the field of Human Resource Management				Total
		Not familiar	Somewhat familiar	Moderately familiar	Very familiar	
Age:	**18-34Millennial**	16	27	14	10	67
	35-54 GenX	7	14	16	12	49
	55-64 Boomer	1	2	1	9	13
Total		**24**	**43**	**31**	**31**	**129**

Table 4.5 Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.493[a]	6	.001
Likelihood Ratio	18.954	6	.004
Linear-by-Linear Association	13.094	1	.000
N of Valid Cases	**129**		

In analyzing the data, Table 4.4, a **cross-tabulation approach,** paired with the Table 4.5, **Chi-Square test of independence,** was employed to examine the relationship between *Age groups and familiarity with Competency Framework Development in Human Resource Management (HRM).* This method was chosen for its effectiveness in identifying associations between categorical variables—in this case, *Age groups* (18–34, 35–54, and 55–64) and *levels of familiarity with competency frameworks* (Not familiar, Somewhat familiar, Moderately familiar, and Very familiar. This finding aligns with the observations of Waligóra (2024) who highlighted that younger employees tend to demonstrate greater adaptability to emerging HR practices, including competency frameworks, compared to their older counterparts. The study underscores the critical role of age diversity in shaping workplace dynamics and influencing the adoption of HRM tools. It further suggests that younger employees are more inclined to engage with and effectively comprehend modern HR practices.

In Table 4.5, the Chi-Square test results ($\chi^2 = 21.493$, df = 6, p = .001) where, 'df' stands for 'Degree of freedom', reveal a statistically significant relationship between Age and familiarity with Competency Framework Development in HRM at the 0.05 level. The Asymptotic Significance (2-sided) value of .001 enables rejection of the null hypothesis, confirming an association between age and familiarity. These findings align with existing literature on demographic influences in competency awareness (Midhat Ali *et al.*, 2021).

Additionally, the **Linear-by-Linear Association value** (13.094, p = .000) derived from the present study suggests a clear linear trend, further reinforcing the significance of age in predicting familiarity levels.

Another question asked was, *how does the Competency Framework Development the suitability and adaptability of personnel in small-sized industries?* The findings from the majority of respondents (34.1%) rated Competency Framework as "Very Important"

in developing suitability and adaptability of personnel in small-sized industries. A smaller percentage (5%) rated it as “Least important”, while only 27.9 % considered it “Somewhat important”.

4.1.2 Awareness of AI-Based Tools in HRM

To assess respondents “Familiarity with AI-based tools or technology that can assist in evaluation, a categorical question was asked. The majority of respondents in Table 4.6, (64.3%) reported being aware of AI tools that can assist in evaluating personnel, while (35.7%) indicated no awareness. The findings emphasize the pressing need to enhance awareness and provide targeted education on the practical applications of AI within small-scale HR practices (Siradhana and Arora, 2023).

Table 4.6 AI based tools awareness for evaluation.

		Frequency	Percent
Valid	Yes	83	64.3
	No	46	35.7
	Total	129	100.0

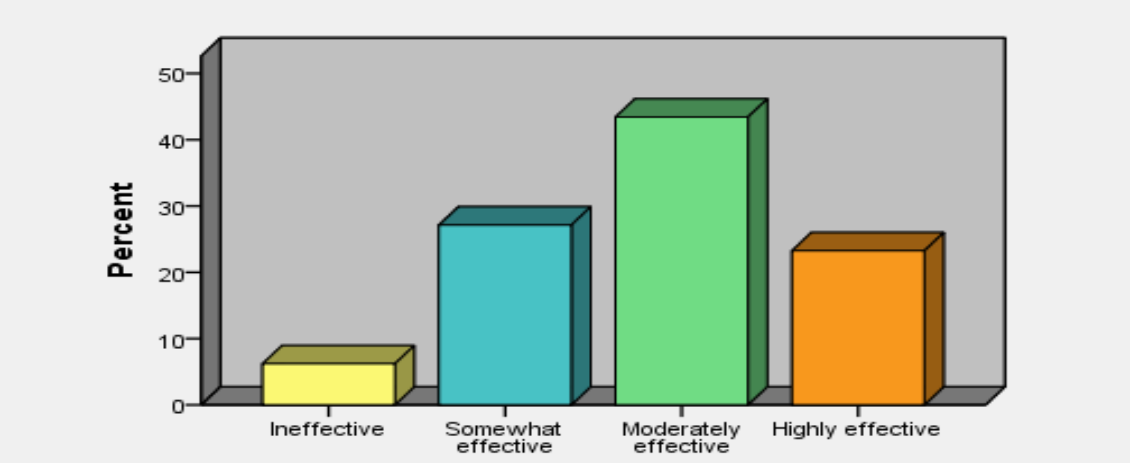
4.1.3 Perceived Effectiveness of AI in Competency Framework Development

Respondents were asked to rate how effective AI could be in improving employee performance when integrated with CFD. The majority of respondents (76.7%) considered it to be moderately effective, indicating a positive perception of AI's potential role in performance enhancement.

Table 4.7. Effectiveness of AI in Competency Framework Development

		Frequency	Percent	Cumulative Percent
Valid	Ineffective	8	6.2	6.2
	Somewhat effective	35	27.1	33.3
	Moderately effective	56	43.4	76.7
	Highly effective	30	23.3	100.0
	Total	**129**	**100.0**	

Figure 4.1 Effectiveness of AI in Competency Framework Development



4.1.4 Key Benefits of AI in Competency Framework Development

Respondents were asked to select the key benefits of using AI in CFD. The most frequently selected benefit was "Improved Job Performance" (67.4%), Kadirov *et al*, (2024) reported, a significant 30% increase in employee productivity in organizations that adopted AI-enhanced HR practices. This improvement is attributed to advanced

performance management systems, closely reflecting the 'Improved Job Performance' benefit emphasized by respondents in this study (Kadirov *et al.*, 2024, pp. 1-8), followed by "Enhanced Decision-Making" (58.9%) Dreković, Radosavljević and Teofilović, (2023) demonstrated, a 25% improvement in decision-making efficiency, characterized by increased speed and accuracy when AI was integrated into HR processes.

Whereas, "Better Talent Retention" (55.0%). The variety of selected benefits underscores AI's broad potential to influence multiple HR outcomes in small-sized industries. Madhavkumar (2023) highlighted, a 20% reduction in employee turnover rates among organizations incorporating AI into their HR practices. These findings strongly correlate with the 'Better Talent Retention' benefit reported in the study, reinforcing AI's role in fostering stable and engaged workforces. The integration of AI has also proven instrumental in developing competency frameworks. Anand (2021) revealed that, organizations employing AI for competency mapping experienced a 40% improvement in identifying skill gaps, underscoring the critical role AI plays in enhancing HR outcomes.

Table 4.8 Key Benefits of AI in Competency Framework Development.

Key Benefits	Frequency	Percent
Improved Job Performance	87	67.4%
Enhanced Decision-Making	76	58.9%
Better Talent Retention	71	55.0%
Increased Employee Engagement	68	52.7%

4.1.5 Confidence in Identifying Skill Gaps with AI in CFD

When asked how confident they were in AI's ability to identify skill gaps and training needs through CFD, the responses showed that (73.6%) were “Moderately confident”. However, a noticeable percentage (27.1%) expressed low confidence, indicating room for building trust in AI-driven assessments.

Table 4.9 Confidence in Identifying Skill Gaps

		Frequency	**Percent**	**Cumulative Percent**
Valid	**Not confident at all**	8	6.2	6.2
	Slightly confident	27	20.9	27.1
	Moderately Confident	60	46.5	73.6
	Highly confident	34	26.4	100.0
	Total	**129**	**100.0**	

4.1.6 Impact of AI on Required Competencies

Respondents were asked how they believe AI will impact required competencies in HR. A majority (61.24%) felt that AI will enhance existing competencies, while 27.1% believed it will require new competencies. These findings suggest that professionals in small-scale industries are aware of the need to adapt to technological changes brought by AI.

Figure 4.2 Impact of AI on Required Competencies

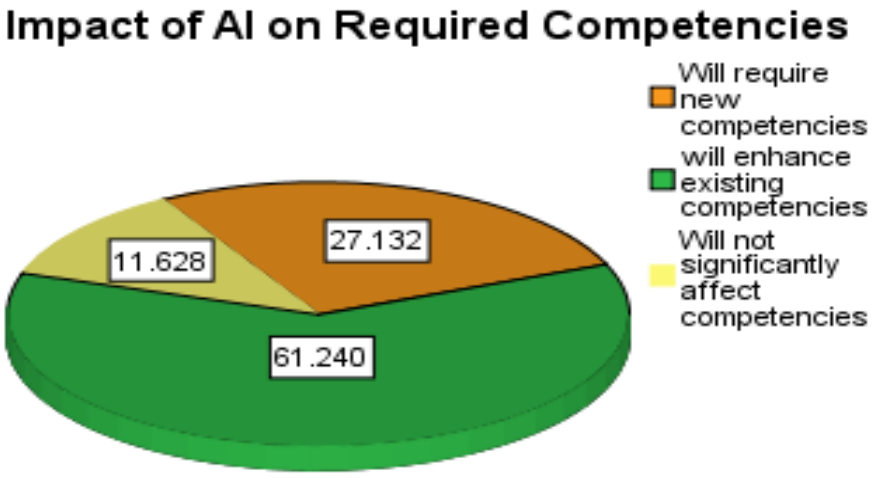


Table 4.10 Correlation between Familiarity with AI and Confidence in Adapting to AI Tools

Correlations			**Familiarity with AI Concepts**	**Confidence in Adapting to AI Tools**
Spearman's rho	**Familiarity with AI Concepts**	**Correlation Coefficient**	1.000	.466**
		Sig. (2-tailed)	.	.000
		N	129	129
	Confidence in Adapting to AI Tools	**Correlation Coefficient**	.466**	1.000
		Sig. (2-tailed)	.000	.
		N	**129**	**129**
Correlation is significant at the 0.01 level (2-tailed).				

The analysis conducted reveals a moderate positive correlation between Familiarity with AI Concepts and Confidence in Adapting to AI Tools, with a Spearman's correlation coefficient of $\rho = 0.466$ ($p < 0.001$). This finding suggests that as individuals become more familiar with AI concepts, their confidence in adapting to AI tools also

increases. The use of Spearman's rank correlation coefficient was appropriate in this context, as it effectively measures the strength and direction of the association between two ranked variables.

Table 4.11 Correlation Result

Variables	Spearman's ρ\rhoρ	p-value
Familiarity with AI Concepts	1.000	--
Confidence in Adapting to AI Tools	0.466**	0.000

Significance Level: The p-value of less than 0.001 indicates that the correlation is statistically significant at the 0.01 level (2-tailed). Therefore, we can confidently reject the null hypothesis, which put forward that there is no relationship between these two variables. This analysis underscores the importance of familiarity with AI concepts as a significant factor influencing confidence in the adaptation to AI tools.

4.1.6 Analysis of Variance (ANOVA) Results: Confidence in Adapting to AI Tools

Purpose of the Analysis: The primary objective of this analysis of Table 12, ANOVA Test, is to investigate the relationship between familiarity with AI concepts and confidence in adapting to AI tools. Specifically, we aim to determine whether different levels of familiarity *(independent variable, IV)* significantly affect individuals' confidence *(dependent variable, DV)* in using AI tools. The analysis employs ANOVA to assess whether there are statistically significant differences in confidence levels across the various familiarity groups.

Rationale for Choosing ANOVA: The Analysis of Variance (ANOVA) test was selected for this study due to its effectiveness in comparing means across multiple groups. ANOVA is particularly suitable when assessing the impact of one independent variable on a dependent

variable while controlling for variance within groups. In this case, the IV is familiarity with AI concepts, categorized into "Not Familiar," "Somewhat Familiar," "Moderately Familiar," and "Very Familiar." The DV is confidence in adapting to AI tools. ANOVA allows for the examination of differences in confidence levels across these familiarity categories, providing insights into how familiarity influences confidence in using AI tools. This is particularly relevant in the context of HR competency frameworks, which must adapt to the evolving technological landscape (Nairn and Piatti-Farnell, 2024).

Levene's Test for Homogeneity of Variances: Before conducting the ANOVA, Levene's Test for homogeneity of variances was performed. The results yielded a Levene Statistic of 1.651 with a significance value of 0.181. Since this p-value is greater than 0.05, we do not reject the null hypothesis, confirming that the assumption of equal variances is met. This allows for the valid application of ANOVA, ensuring that the analysis accurately reflects the differences in confidence levels across familiarity groups.

Table 4.12 ANOVA: Confidence in Adapting to AI Tools

Source	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	25.094		8.365	12.990	0.000
Within Groups	80.488	25	0.644		
Total	105.581	28			

ANOVA Summary: The results of the ANOVA analysis are presented in Table 4.12. The F-statistic is calculated at 12.990 with a corresponding p-value of 0.000. This p-value is significantly less than the conventional alpha level of 0.05, indicating that there is a statistically

significant difference in confidence levels in adapting to AI tools across different familiarity levels with AI concepts.

Table 4.13 Multiple Comparisons: Post Hoc Analysis Results.

Dependent Variable: Confidence in Adapting to AI Tools Bonferroni						
(I) Familiarity with AI Concepts	**(J) Familiarity with AI Concepts**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
					Lower Bound	**Upper Bound**
Not Familiar	**Somewhat familiar**	-.264	.268	1.000	-.98	.46
	Moderately familiar	-.490	.258	.359	-1.18	.20
	Very familiar	-1.313*	.272	.000	-2.04	-.58
Somewhat familiar	**Not Familiar**	.264	.268	1.000	-.46	.98
	Moderately familiar	-.226	.177	1.000	-.70	.25
	Very familiar	-1.048*	.196	.000	-1.57	-.52
Moderately familiar	**Not Familiar**	.490	.258	.359	-.20	1.18
	Somewhat familiar	.226	.177	1.000	-.25	.70
	Very familiar	-.822*	.182	.000	-1.31	-.34
Very familiar	**Not Familiar**	1.313*	.272	.000	.58	2.04
	Somewhat familiar	1.048*	.196	.000	.52	1.57
	Moderately familiar	.822*	.182	.000	.34	1.31
The mean difference is significant at the 0.05 level.						

Following the Analysis of Variance (ANOVA), a *post hoc analysis utilizing Bonferroni corrections* was conducted to expound specific differences in confidence levels among the various familiarity groups regarding AI concepts and their adaptability to AI tools.

This analytical approach is particularly pertinent within the framework of competency development for HR in small industries, as it facilitates a comprehensive examination of the data collected during the primary analysis.

The relationship between individuals' familiarity with Artificial Intelligence (AI) concepts and their confidence in adapting to AI tools is examined. A one-way Analysis of Variance (ANOVA) was conducted to assess whether varying levels of familiarity with AI concepts correspond to differences in self-reported confidence in adapting to AI tools. The independent variable, 'Familiarity with AI Concepts,' comprised four categories: Not Familiar, Somewhat Familiar, Moderately Familiar, and Very Familiar. The dependent variable was 'Confidence in Adapting to AI Tools.'

The ANOVA yielded a statistically significant effect of familiarity on confidence levels, $F(3, 125) = [\text{insert F-value}]$, $p < 0.05$.

The notation "F (3, 125)" represents the degrees of freedom associated with the F-statistic in ANOVA analysis. In this context, the first number (3) corresponds to the degrees of freedom between groups (numerator), and the second number (125) corresponds to the degrees of freedom within groups (denominator).

Calculating Degrees of Freedom in ANOVA:

Between-Groups Degrees of Freedom (Numerator):

Formula: df between= k-1

k = Number of groups

Calculation: With four groups (Not Familiar, Somewhat Familiar, Moderately Familiar, Very Familiar), df between= 4-1= 3

Within-Groups Degrees of Freedom (Denominator):

Formula: df within=N- k

N = Total number of observations

Calculation: Assuming a total of 129 participants, df within=129-4=125

Therefore, the F-statistic for the ANOVA would be reported as F(3, 125).

These degrees of freedom are essential for determining the critical value of 'F' from statistical tables and for assessing the statistical significance of results. This finding indicates that at least one group's mean confidence score significantly differs from the others.

To identify specific group differences, Bonferroni post hoc tests were performed. The analysis revealed the following:

Not Familiar vs. Very Familiar: Individuals with no familiarity with AI concepts reported significantly lower confidence in adapting to AI tools compared to those who are very familiar with AI (Mean Difference = -1.313, $p < 0.001$).

Somewhat Familiar vs. Very Familiar: Participants who are somewhat familiar with AI concepts also exhibited significantly lower confidence than those very familiar with AI (Mean Difference = -1.048, $p < 0.001$).

Moderately Familiar vs. Very Familiar: Those moderately familiar with AI concepts reported significantly less confidence than the very familiar group (Mean Difference = -0.822, $p < 0.001$).

Other Comparisons: No significant differences in confidence levels were observed between the Not Familiar, Somewhat Familiar, and Moderately Familiar groups when compared to each other ($p > 0.05$).

In conclusion, the post hoc analysis not only provides valuable insights into the interplay between familiarity and confidence but also offers actionable recommendations for small-scale industries and HR professionals. By addressing the specific needs of each familiarity group, organizations can cultivate a more competent and confident workforce capable of effectively leveraging AI technologies, thereby enhancing overall

organizational success. The mean difference observed in confidence levels is significant at the 0.05 level, reinforcing the importance of these findings.

4.2 Research Question Two (RQ2): How can using competency models reduce costs and time by placing the right person in the right job, identifying and attracting candidates with necessary competencies, improving job satisfaction, productivity, employee retention, and business efficiency in small-sized companies?

4.2.1 Quantitative findings from survey

According to the analysis which assessed the familiarity of 129 respondents with competency models in the recruitment process, reveals an important insight into the current state of awareness in small-sized industries. The majority of respondents, nearly 45%, indicated that they were 'Not familiar' with competency models, while 33.3% reported being 'Moderately familiar', and 21.7% considered themselves 'Very familiar' with the concept. These findings reveal a substantial gap in understanding, as nearly half of the respondents have little to no awareness of competency models. The data indicates to a clear need for more widespread education and training regarding competency frameworks in recruiting processes.

Table 4.14 Familiarity with the Concept of Competency Models in the Recruitment Process

Responses		Frequency	Percent
Valid	**Not familiar**	58	45.0
	Moderately familiar	43	33.3
	Very familiar	28	21.7
	Total	**129**	**100.0**

Benefit of this particular analysis: This analysis serves as an important foundation for further research into how increased familiarity with competency models can lead to better recruitment outcomes. The results underscore the importance of promoting awareness and education about competency models among HR professionals and managers. By offering training programs or workshops, organizations can improve their recruitment processes, reduce inefficiencies, and better alignment of their workforce with organizational needs. This could ultimately enhance not only the efficiency of the recruitment process but also the broader effectiveness of HR practices within small-sized companies.

4.2.2 Perception of Cost Savings from Competency Models

Table 4.15, presents the frequency distribution of 129 participants' perceptions regarding the cost savings attributed to competency models in the recruitment process. The results indicate that the majority of respondents view competency models as impactful in reducing recruitment costs. Specifically, 40.3% of participants rated the cost-saving potential as "Moderately important," while 34.1% considered it "Very important." A smaller proportion, 20.2%, deemed it "Somewhat important," and only 5.4% regarded it as "Least important."

Table 4.15 Frequency distribution of participants' perceptions regarding the cost savings attributed to competency models in the recruitment process.

Responses		Frequency	Percent
Valid	**Least important**	7	5.4
	Somewhat important	26	20.2
	Moderately important	52	40.3
	Very important	44	34.1
	Total	**129**	**100.0**

Table 4.16 Descriptive statistics

Response	Mean	Std. Deviation	N
Perception of cost savings from competency model	3.03	.874	129
Perception of time savings from competency model	2.95	.917	129

Figure 4.3 Perceptions regarding cost savings from the competency model

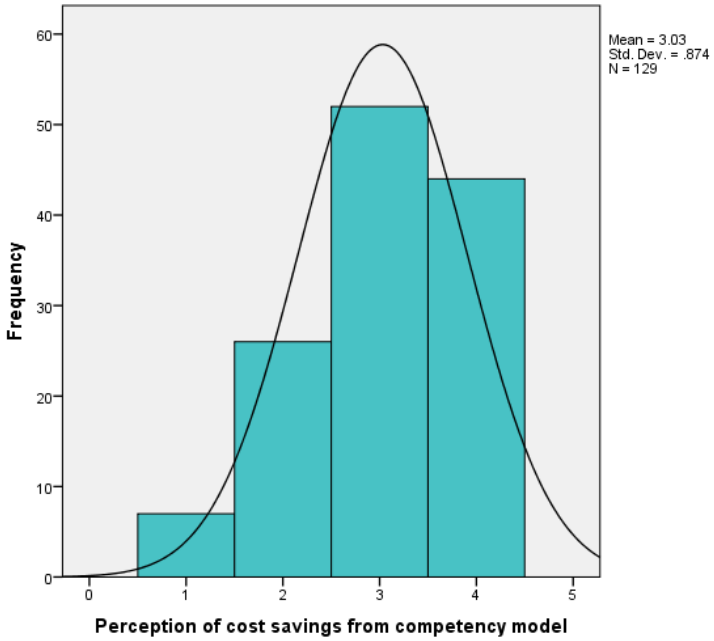


Figure 4.3, the histogram presented here complements the frequency table by providing a visual representation for quicker and more intuitive understanding of the data. This visual aids in effectively conveying the consistency and variability of the responses.

Table 4.16 and Figure 4.3, offer further insight into the respondents' perceptions of cost savings from competency models. The *mean value of 3.03*, coupled with a *standard deviation of 0.874*, suggests that, on average, participants perceive competency models as 'Moderately important' in reducing recruitment costs. The relatively low standard deviation implies some consensus among the respondents, with only a moderate degree of variability in opinions. These findings are consistent with recent studies e.g., Campion *et al.*, (2011) that highlight the potential of competency models in improving the efficiency of recruitment processes. By ensuring that candidates with the right competencies are selected, these models help organizations reduce the time and financial resources invested in recruitment efforts.

Table 4.17 Correlation between Cost and Time Savings

Correlation between Cost and Time Savings		**Perception of cost savings from competency model**	**Perception of time savings from competency model**
Perception of cost savings from competency model	**Pearson Correlation**	1	.528**
	Sig. (2-tailed)		.000
	N	129	129
Perception of time savings from competency model	**Pearson Correlation**	.528**	1
	Sig. (2-tailed)	.000	
	N	**129**	**129**
Correlation is significant at the 0.01 level (2-tailed).			

Table 4.17, the correlation analysis reveals a significant positive relationship between the *perception of cost savings and time savings* from the use of competency models. With a *Pearson correlation coefficient of 0.528 ($p < 0.01$),* the results suggest that respondents who view competency models as effective in reducing costs also tend to perceive these models as beneficial in saving time. This finding further supports the notion that competency models enhance recruitment efficiency by improving both financial and temporal aspects of the process (Hossler and James, 2021).

Benefit of the Analysis: This analysis provides valuable insights into how HR professionals perceive the cost and time savings from competency models. It also highlights the potential for small-sized companies to implement these models as part of their recruitment processes to improve efficiency. Given the significant relationship between cost and time savings, the findings indicate that small organizations might improve their recruiting efforts by using competence frameworks that allow them to screen applicants more efficiently while reducing recruitment time and resources. The result highlight the importance of increasing awareness and training in the use of competency models for raising knowledge and training in the usage of competence models among HR professionals, which might lead to better resource management and recruiting outcomes. The strong relationship between perceived cost and time savings highlights the twin benefits of competence models in enhancing recruiting methods in small-sized enterprises. This analysis allows for opportunities for future research into the broader influence of competence models on HR practices in these industries.

Table 4.18 Usage of Competency Models and Perception of Cost and Time Savings

Usage of competency models to identify and attract candidates who already possess the necessary competencies * Importance of competency in reducing the cost and time of recruitment in small-sized industry Crosstabulation

			Importance of competency in reducing the cost and time of recruitment in small-sized industry				
			Least important	Somewhat Important	Moderately important	Very important	Total
Usage of competency models to identify and attract candidates who already possess the necessary competencies	Yes	Count	5	8	28	32	73
		% within Usage of competency models to identify and attract candidates who already possess the necessary competencies	6.8%	11.0%	38.4%	43.8%	100.0%
	No	Count	2	18	24	12	56
		% within Usage of competency models to identify and attract candidates who already possess the necessary competencies	3.6%	32.1%	42.9%	21.4%	100.0%
Total		Count	7	26	52	44	129
		% within Usage of competency models to identify and attract candidates who already possess the necessary competencies	5.4%	20.2%	40.3%	34.1%	100.0%

The cross-tabulation between the usage of competency models and their perceived importance in reducing recruitment costs and time reveals a significant association. Respondents who actively used competency models were more likely to consider them crucial in enhancing recruitment efficiency.

Table 4.19 Chi- Square Test

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	12.507[a]	3	.006
Likelihood Ratio	12.770	3	.005
Linear-by-Linear Association	5.684	1	.017
N of Valid Cases	129		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is 3.04.

The Pearson Chi-Square value (12.507, p = 0.006) demonstrates a statistically significant relationship between the frequency of competency model usage and their perceived role in improving cost and time savings. This suggests that the more organizations incorporate competency models, the more likely they are to recognize their positive impact on recruitment processes.

Table 4.20. Perceived improvement in recruitment efficiency

		Frequency	**Percent**
Valid	No improvement	9	7.0
	Some improvement	30	23.3
	Moderate improvement	48	37.2
	Significant Improvement	42	32.6
	Total	**129**	**100.0**

Frequency Analysis: The distribution of responses regarding perceived improvement in recruitment efficiency shows a variety of opinions on the impact of competency models. As seen in Table 19, the majority of respondents (37.2%) reported 'Moderate improvement' in recruitment efficiency, while 32.6% noted a significant improvement. A smaller proportion of respondents indicated either 'No improvement' (7.0%) or 'Some improvement' (23.3%).

Table 4.20 Familiarity with Competency Models in Recruitment Processes.

Descriptives

Perceived improvement in recruitment efficiency

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Not familiar	58	2.76	.979	.129	2.50	3.02	1	4
Moderately familiar	43	2.91	.868	.132	2.64	3.17	1	4
Very Familiar	28	3.43	.690	.130	3.16	3.70	2	4
Total	129	2.95	.917	.081	2.79	3.11	1	4

In Table 4.20, the descriptive analysis of perceived improvement in recruitment efficiency based on familiarity with competency models reveals a progressive increase in mean values across the familiarity levels. *Respondents not familiar with competency models reported the lowest mean score (M = 2.76, SD = 0.979),* whereas *those moderately familiar indicated a slightly higher perception (M = 2.91, SD = 0.868).* The *very familiar group demonstrated the highest mean score (M = 3.43, SD = 0.690),* reflecting a strong perception of efficiency improvements. Overall, the sample had a *mean score of 2.95 (SD = 0.917).*

The 95% confidence intervals further highlight these differences, with the "Very Familiar" group ([3.16, 3.70]) distinctly higher than the "Not Familiar" group ([2.50, 3.02]). This indicates that higher familiarity is consistently associated with a stronger perception of recruitment efficiency improvements. These results suggest that familiarity with competency models significantly enhances perceptions of their utility in improving recruitment processes. This finding aligns with prior research by Cao and Zhang (2022) who emphasized the role of competency awareness in optimizing recruitment outcomes. Additionally, studies by Boon *et al.*, (2011) highlighted the importance of structured

frameworks in enhancing recruitment efficiency. The results give emphasis to the importance of training and familiarity with competency models to maximize recruitment efficiency in small-sized industries. Future research may utilize inferential statistics to test the significance of these differences and explore how familiarity levels influence other recruitment metrics.

Table 4.21 ANOVA: Perceived recruitment efficiency based on the level of familiarity with competency models.

ANOVA

Perceived improvement in recruitment efficiency

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.615	2	4.308	5.477	.005
Within Groups	99.106	126	.787		
Total	107.721	128			

The analysis of variance (ANOVA) was performed to assess whether there are significant differences in perceived recruitment efficiency based on the level of familiarity with competency models. The statistical details are as follows:

Between Groups: The sum of squares was 8.615, with 2 degrees of freedom, resulting in a mean square of 4.308.

Within Groups: The sum of squares was 99.106, with 126 degrees of freedom, and a mean square of 0.787.

Total Variance: The total sum of squares was 107.721.

F-statistic: The calculated F-value was 5.477, with a significance level of p=0.005p = 0.005p=0.005.

The significant p-value (less than 0.05) indicates that the level of familiarity with competency models significantly affects the perception of recruitment efficiency,

suggesting that greater familiarity with these models is associated with improved recruitment efficiency. This finding supports the idea that competency models play a critical role in enhancing recruitment processes. The ANOVA results highlight that as familiarity with competency models increases, this aligns with the hypothesis that competency models contribute to streamlining recruitment practices and improving efficiency. Further analysis (e.g., effect sizes and post hoc tests) provides additional insight into the strength and nature of these differences, which are essential for validating their practical implications in small-sized industries.

Table 4.22 Post Hoc Analysis

Multiple Comparisons

Dependent Variable: Perceived improvement in recruitment efficiency

Tukey HSD

(I) Familiarity with the concept of competency models in Recruitment process	(J) Familiarity with the concept of competency models in Recruitment process	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Not familiar	Moderately familiar	-.148	.178	.684	-.57	.27
	Very Familiar	-.670*	.204	.004	-1.15	-.19
Moderately familiar	Not familiar	.148	.178	.684	-.27	.57
	Very Familiar	-.522*	.215	.044	-1.03	-.01
Very Familiar	Not familiar	.670*	.204	.004	.19	1.15
	Moderately familiar	.522*	.215	.044	.01	1.03

*. The mean difference is significant at the 0.05 level.

The Tuskey HSD post-hoc analysis was conducted to further explore the differences between the three levels of familiarity with competency models ("Not familiar," "Moderately familiar," and "Very familiar") in terms of perceived improvement in recruitment efficiency. The results revealed the following significant pairwise comparisons:

Not familiar vs. Very familiar: The mean difference was -0.670, with a standard error of 0.204, and a p-value of 0.004, indicating a significant difference between these two groups. Respondents who were very familiar with competency models reported significantly higher perceived improvement in recruitment efficiency compared to those who were not familiar.

Moderately familiar vs. Very familiar: The mean difference was -0.522, with a standard error of 0.215, and a p-value of 0.044, again showing a significant difference. Those moderately familiar with competency models also perceived a lower improvement in recruitment efficiency compared to those who were very familiar.

Not familiar vs. Moderately familiar: No significant difference was found between these two groups, as the p-value was 0.684, indicating no meaningful difference in perceived recruitment efficiency between the "Not familiar" and "Moderately familiar" groups.

These findings suggest that the perceived improvement in recruitment efficiency increases significantly with familiarity with competency models, particularly between the "Not familiar" and "Very familiar" groups. This supports the idea that deeper understanding and integration of competency models may lead to enhanced perceptions of recruitment effectiveness. These results underscore the importance of familiarity with competency models in improving recruitment efficiency, a critical factor in enhancing the recruitment process in small-sized industries.

Table 4.23 Pearson Correlation Analysis: Perceived Improvement in Recruitment Efficiency and Effectiveness in Attracting Candidates

Correlations

		Perceived improvement in recruitment efficiency	Effectiveness in attracting candidates
Perceived improvement in recruitment efficiency	Pearson Correlation	1	.509**
	Sig. (2-tailed)		<.001
	N	129	129
Effectiveness in attracting candidates	Pearson Correlation	.509**	1
	Sig. (2-tailed)	<.001	
	N	129	129

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

The Pearson correlation analysis conducted between "Perceived improvement in recruitment efficiency" and "Effectiveness in attracting candidates" shows a moderate, positive correlation of $r = 0.509$ ($p < 0.001$). This indicates a significant relationship between the two variables, suggesting that organizations perceive greater improvement in recruitment efficiency, they also tend to report higher effectiveness in attracting qualified candidates.

Relevance to Literature: This result aligns with previous research (B Bharathi, MK Saraswathy, 2023) that emphasizes the importance of streamlining recruitment processes. Studies have shown that improving recruitment efficiency not only reduces time and costs but also improves the overall quality of candidates being attracted to the organization.

In summary, the Pearson correlation results highlight a substantial relationship between recruitment efficiency and the ability to attract candidates. This supports the use of

competency models as an effective tool for improving both recruitment efficiency and candidate attraction in small-sized industries. Small- sized industries looking to optimize their hiring processes should focus on refining these models to enhance both dimensions.

4.3 Research Question Three (RQ3): The final issue "Does Competencies have any difference in measurable context on workers in Industries with HR and without HR?"

4.3.1 Quantitative findings from survey

Table 4.24, presents the distribution of respondents is based on whether their industry has a dedicated Human Resources (HR) department. According to the result, the majority of respondents (55.8%) work in industries that do not have an HR department, whereas 44.2% reported having one.

These data show that a considerable section of small-sized industries lack a professional human resources department, which may have an influence on structured competency-based recruiting, training, and performance evaluation.

Chi-square test was performed and the Results from the Chi-square test: $\chi^2 = 1.744$, df = 1, p = 0.187, As the p-value (0.187) is larger than 0.05, therefore the distribution of respondents working in an industry with an HR department and without it is not statistically significant. The data also show that a significant proportion of small-sized industries do not have a professional human resources department which could affect the structured competency-based recruiting, training and performance evaluation ($\chi^2 = 1.744$, df = 1, p = 0.187) indicating that the difference is not statistically significant.

Table 4.24 Respondent working in an industry with an HR department

	Response	Frequency	Percent	Cumulative Percent
Valid	**Yes**	57	44.2	44.2
	No	72	55.8	100.0
	Total	129	100.0	

Several studies highlight the absence of dedicated HR departments in many small and medium-sized enterprises (SMEs). For example, research on small firms in the UK reveals that "none of the 17 small firms in our study had an HR specialist or department" (Atkinson et al., 2021, p. 8), indicating a potential limitation in implementing structured competency-based practices. Further, a study examining challenges in startup companies found that "Inexistence of an HR department in startups" is a significant issue (Priyanka et al., 2022, pp. 14–15), directly impacting HR practices like recruiting, training, and performance evaluation.

4.3.2. Competencies importance for workers in industries with HR Department

Table 4.25, depicts respondents' perspectives on the relevance of competencies for employees in industries with an HR department. The majority (49.6%) evaluated competencies as "Most Important," with 24.8% considering them "Very Important." This suggests that nearly three-quarters (74.4%) of respondents noticed competencies as an important component in worker success.

Table 4.25 Competency Importance

		Frequency	Cumulative Percent
Valid	**Least important**	3	2.3
	Somewhat important	9	9.3
	Moderately important	21	25.6
	Very important	32	50.4
	Most important	64	100.0
	Total	129	

The relevance of competencies for employee success and organizational effectiveness. Multiple studies demonstrate a positive correlation between competency-based performance management systems and superior performance, leading to improved organizational effectiveness (Shet, Patil and Chandawarkar, 2019).

Table 4.26 Cross tabulation of competencies importance Working with or without a HR department and Competencies importance

		Least important	Somewhat important	Moderately important	Very important	Most important	Total
1) Are you currently working in an industry with an HR department?	**1**	0	2	10	15	30	57
	2	3	7	11	17	34	72
Total		**3**	**9**	**21**	**32**	**64**	**129**

A cross-tabulation was used to examine the link between the presence of an HR department and the perceived relevance of competencies (Table 4.26). According to the findings, respondents in industries with an HR department believe competencies are more important than those in industries without an HR department.

According to the data, 50% (30 out of 57) of respondents in industries with an HR department considered competencies as "Most Important," compared to 47.2% (34 out of 72) in industries without an HR department. Furthermore, sectors without HR departments had a larger number of respondents who rated competencies as "Somewhat Important" (7 out of 72) and "Moderately Important" (11 out of 72) than those with an HR departments. This is consistent with prior research indicates a positive correlation between the presence of a formal HR function and the implementation of competency models in workforce management. For example, a study on competency-based qualification standards in the federal government showed that a dedicated HR department facilitated the development and implementation of competency models, leading to improved candidate assessment and selection processes (Rodriguez et al., 2002, p. 12). This aligns with broader research demonstrating that structured HR processes, including those based on competency models, enhance employee development, recruitment effectiveness, and overall organizational performance (Campion *et al.*, 2011).

Table 4.27. Competencies measurable impact on employee performance and productivity.

		Frequency	Percent
Valid	**Strongly disagree**	6	4.7
	Disagree	13	10.1
	Agree	74	57.4
	Strongly disagree	36	27.9
	Total	**129**	**100.0**

Table 4.27, depicts the integration of competency-based frameworks within organizations has been extensively studied, revealing their impact on employee performance and productivity. A majority of 85.3% of respondents (combining 57.4% who 'agreed' and 27.9% who 'strongly agreed') recognize the positive influence of competencies on performance, underscoring the critical role of skills in improving personnel efficiency and adaptability.

Further, studies have established a strong correlation between human capital—including skills, knowledge, and behavior—and organizational success, suggesting that competency models enhancing these aspects can lead to improved performance. For instance, research by McClelland (1973) and Altinay, Altinay and Gannon (2008) supports this linkage. Additionally, a study by Cardy and Selvarajan (2006) validated a competency framework through analysis, demonstrating its high acceptability and potential for implementation across various human resource stages.

However, it's important to acknowledge that a minority of respondents (14.8%) disagreed or strongly disagreed with the positive impact of competencies, possibly due to

challenges such as inadequate implementation or a lack of understanding of their benefits.

Table 4.28 Cross-Tabulation: Presence of an HR Department and Perceived Impact of Competencies on Employee Performance and Productivity.

	Competencies measurable impact on employee performance and productivity				
	Strongly disagree	**Disagree**	**Agree**	**Strongly disagree**	**Total**
1) Are you currently working in an industry with an HR department?	2	4	32	19	57
	4	9	42	17	72
Total	**6**	**13**	**74**	**36**	**129**

A cross-tabulation was carried out to evaluate the association between the presence of an HR department and the perceived measurable influence of skills on employee performance and productivity (Table 4.28). The results from the study reveal that industries with an HR department had a quite higher percentage of respondents who agree (56.1%) and strongly agree (33.3%) that competencies have a meaningful influence on employee performance and productivity. In contrast, industries without an HR department exhibit substantial agreement, but a somewhat higher proportion of respondents disagreed (12.5%) or strongly disagreed (5.6%).

Research presented in the above Table 4.28, suggests a correlation between the presence of a dedicated HR department and the adoption of competency-based models,

leading to increased worker productivity (Midhat Ali *et al.*, 2021). This aligns with previous research showing that structured HR practices foster competency development, skill application, and improved worker productivity (Altinay, Altinay and Gannon, 2008). However, a significant number of respondents from organizations without a dedicated HR department also reported perceiving a positive effect of competency frameworks (Atkinson *et al.*, 2022).

Table 4.29 Relationship between Satisfaction with Competency Frameworks and Perceived Importance of Competency Development for Job Satisfaction

Correlations				
			How satisfied are you with the current competency framework development practices in your organization ?	**How important do you think HR competency development is for enhancing employee job satisfaction and retention in small- scale industry?**
Spearman's rho	**How satisfied are you with the current competency framework development practices in your organization?**	**Correlation Coefficient**	1.000	.034
		Sig. (2-tailed)	.	.702
		N	129	129
	How important do you think HR competency development is for enhancing employee job satisfaction and	**Correlation Coefficient**	.034	1.000
		Sig. (2-tailed)	.702	.

	retention in small- scale industry?	**N**	**129**	**129**

A *Spearman's rank correlation analysis* was used to determine whether satisfaction with competency framework development procedures is related to the perceived value of HR competency development in improving employee job satisfaction and retention. The findings are shown in Table 4.29.

The correlation value (ρ=0.34) Indicates a weak positive link between satisfaction with competency frameworks and perceived relevance of competency development for job satisfaction. However, the p-value (0.702) is not statistically significant ($p > 0.05$), implying that there is insufficient evidence to show that these two variables have a significant correlation in this sample. This finding aligns with research suggesting that while competency frameworks enhance long-term employee performance, their immediate impact on job satisfaction may need further support through HR policies, leadership engagement, and career development initiatives (Midhat Ali and Mohsin Qureshi, 2021).

4.3.3 Assessment of self-rated HR skills and agreement with key HR capabilities.

A Principal Component Analysis (PCA) was used to examine respondents' agreement with essential HR requirements as well as their self-rated HR abilities. The purpose of this research was to discover the underlying structure of HR skills and how distinct abilities relate to one another. Table 4.30, summarizes the overall variation explained by each extracted component. The first two components accounted for 79.56% of the total

variation, demonstrating that HR skills and talents may be classified into two broad categories.

Table 4.30 Total Variance Explained (PCA Analysis of HR Skills and Abilities)

Component	Initial Eigenvalues		
	Total	**% of Variance**	**Cumulative %**
1	8.540	71.165	71.165
2	1.007	8.393	79.559
3	.528	4.401	83.960
4	.388	3.233	87.193
5	.323	2.690	89.884
6	.259	2.160	92.044
7	.217	1.808	93.852
8	.199	1.657	95.509
9	.155	1.293	96.802
10	.137	1.143	97.946
11	.132	1.101	99.046
12	.114	.954	100.000
Extraction Method: Principal Component Analysis.			

Since, components with eigenvalues greater than one were preserved, hence two major components were identified. The first component explains 71.17% of the variation, while the second component explains 8.39%, for a total explained variance of 79.56%.

Table 4.31 Rotated Component Matrix

	Component	
	1	**2**
Conflict Resolution	.484	**.765**
Problem – Solving	.255	**.855**
Time Management	.435	**.798**
Organizational Skills	.457	**.751**
Attention to Details	.372	**.827**
I am skilled in identifying and Recruiting suitable candidates	**.807**	.388
I have experience in conducting effective employee onboarding	**.853**	.312
I am capable of managing performance and providing constructive feedback	**.840**	.355
I understand the principles of compensation and benefits management	**.818**	.366
I am skilled in resolving employee relations issues	**.805**	.412
I value continuous learning and professional development	**.769**	.412
I can adapt to changing HR regulations and compliance requirements	**.647**	.500

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table 4.31, displays the *Rotated Component Matrix,* which depicts the factor loadings resulting from *Varimax Rotation*. This strategy was utilized to increase the disparities between components, making interpretation simpler. The Rotated Component Matrix yielded two unique factors:

Component 1 (Core HR Functional Skills) covers Recruiting, Onboarding, Performance management, Compensation & Benefits, Employer relations, and Professional

development. These abilities describe the HR technical skills necessary for workforce management and employee lifecycle endeavors.

Component 2 (Soft abilities and Problem-Solving Abilities): This section covers Conflict resolution, Problem-solving, Time management, Organizational abilities, and Attention to detail. These are the interpersonal and cognitive abilities required for effective HR decision-making and employee engagement.

The substantial loadings on Component 1 imply that respondents ranked themselves higher in technical HR duties, whereas Component 2 shows problem-solving and managerial qualities.

Table 4.32 Mann-Whitney U Test Results for Competency Importance

Important Competencies	Currently working in an industry with an HR department?	N	Mean Rank	Sum of Ranks
Recruitment and Selection	**Yes**	57	67.95	3873.00
	No	72	62.67	4512.00
	Total	129		
Employee Onboarding	**Yes**	57	72.27	4119.50
	No	72	59.24	4265.50
	Total	129		
Performance Management	**Yes**	57	69.20	3944.50
	No	72	61.67	4440.50
	Total	129		
Compensation and Benefits	**Yes**	57	73.65	4198.00
	No	72	58.15	4187.00
	Total	129		
Employee Relations	**Yes**	57	68.42	3900.00
	No	72	62.29	4485.00
	Total	129		
Training and Development	**Yes**	57	69.07	3937.00
	No	72	61.78	4448.00

	Total	129		
HR Compliance and Legal Knowledge	**Yes**	57	70.02	3991.00
	No	72	61.03	4394.00
	Total	129		
Data Analytics and HR Metrics	**Yes**	57	65.53	3735.00
	No	72	64.58	4650.00
	Total	129		

A *Mann-Whitney U test* was used to compare the value of HR capabilities across respondents from industries with and without an HR department. Since, Likert scale data is ordinal, this non-parametric test was used since it does not imply normality and is useful for analyzing group differences.

Table 4.32 (a). Mann-Whitney U test results

Test Statistics[a]

	Recruitment and Selection	Employee Onboarding	Performance Management	Compensation and Benefits	Employee Relations	Training and Development	HR Compliance and Legal Knowledge	Data Analytics and HR Metrics
Mann-Whitney U	1884.000	1637.500	1812.500	1559.000	1857.000	1820.000	1766.000	2022.000
Wilcoxon W	4512.000	4265.500	4440.500	4187.000	4485.000	4448.000	4394.000	4650.000
Z	-.840	-2.065	-1.192	-2.464	-.971	-1.161	-1.416	-.150
Asymp. Sig. (2-tailed)	.401	.039	.233	.014	.331	.246	.157	.881

a. Grouping Variable: Currently working in an industry with an HR department?

Key Terms in the Table 4.32 (a): *Mann-Whitney U* is a test statistic that rates the total of responses from two groups. *Wilcoxon W* is the sum of ranks for the group with the lowest rank sum. The *Z-score* is a standardized statistic that illustrates how dissimilar the two groups are.

Asymp. Sig. (2-tailed): The p-value that determines if the difference is statistically significant (usually, $p < 0.05$).

Statistically significant differences: Employee Onboarding ($p = 0.039$): This implies that employees in sectors with an HR department value Employee Onboarding higher than those in businesses without an HR department. *Compensation and Benefits ($p = 0.014$)*: Similarly, industries having an HR department place a greater value on Compensation and Benefits.

Non-Significant differences: Other capabilities, including as recruitment and selection, training and development, performance management, and human resource compliance, do not differ much across industries with and without an HR department. *Data Analytics and HR Metrics ($p = 0.881$)* has the least difference, suggesting that data-driven HR is still evolving in both industry types. This implies that the aforementioned skills are widely viewed as vital and independent, regardless of the HR department's existence.

Table 4.33 Biggest HR challenge in small- scale industry

		Frequency	Percent
Valid	**Limited resources**	25	19.4
	Lack of specialized HR personnel	54	41.9
	Keeping up with changing regulations	24	18.6
	Employee retention	25	19.4
	Other	1	.8
	Total	129	100.0

Based on survey results, this table 4.33, summarizes the primary HR difficulties that small-scale enterprises faced. The most prevalent issue noted (41.9%) is a lack of specialized HR personnel, indicating a need for committed HR expertise. Limited

resources (19.4%) and employee retention (19.4%) are also challenging indicating financial constraints and challenges in retaining personnel. Keeping up with changing rules (18.6%) is another significant concern, indicating compliance issues. These findings are pertinent to Research Question 3 (RQ3) as these findings highlight major HR shortfalls in small-scale industries, emphasizing the importance of organized competency models for improving management of workers, compliance, and retention tactics.

Figure 4.4 Biggest HR challenge in Small-scale industry

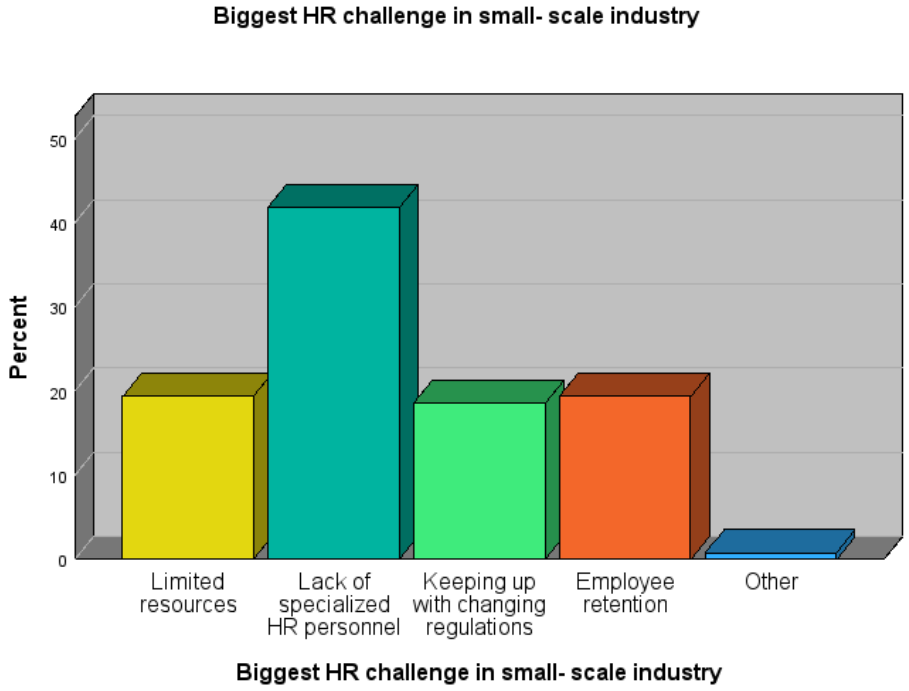


Figure 4.4, visually depicts the distribution of answers to the most significant HR difficulties in small-scale enterprises, supplementing the data reported in Table 4.33.

Table 4.34 Training needs among HR professionals in small-scale industries

		Responses		Percent of Cases
		N	Percent	
Training and development	**a) HR strategy**	68	23.3%	52.7%
	b) Law and Regulations	43	14.7%	33.3%
	c) Employee engagement	49	16.8%	38.0%
	d) HR technology	74	25.3%	57.4%
	e) Diversity and inclusion	58	19.9%	45.0%
Total		**292**	**100.0%**	**226.4%**

a. Dichotomy group tabulated at value 1.

In table 4.34, research was undertaken to identify major training needs among HR professionals in small-scale industries, allowing researchers to better understand where competency development is most required. The multiple-response style allows respondents to indicate more than one training need, reflecting the wide range of skills required in HR roles. Although the overall number of respondents was 129, the total number of responds (N=292) shows that many people selected various training areas. This explains why the amount of replies surpasses the overall number of participants, as each responder have shown an interest in multiple categories. The results highlight that HR Technology (57.4%) is the most significant training demand, followed by HR Strategy (52.7%). Other prominent categories are Diversity & Inclusion (45.0%) and Employee Engagement (38.0%), with Law & Regulations (33.3%) receiving the least attention.

Table 4.35 HR competencies Frequencies

		Responses		Percent of Cases
		N	Percent	
HR competencies	**Effective performance evaluation and feedback**	91	19.9%	85.8%
	Competency- based career development	91	19.9%	85.8%
	Employee engagement and motivation	95	20.7%	89.6%
	Change management and organizational development	89	19.4%	84.0%
	HR metrics and Analytics	92	20.1%	86.8%
Total		**458**	**100.0%**	**432.1%**

a. Dichotomy group tabulated at value 1.

Table 4.35, This research was undertaken to identify major training needs among HR professionals in small-scale industries, leading us to better understand where competency development is most required. The multiple-response style allows respondents to choose more than one training need, reflecting the wide range of skills required in HR roles.

Although, the overall number of respondents was 129, the total number of responds (N=292) shows that many people chose various training areas. This explains why the amount of responses exceeds the overall number of participants, as each respondent possibly shown an interest in many categories. The results show that HR Technology (57.4%) is the most significant training demand, followed by HR Strategy (52.7%). Other prominent categories are Diversity & Inclusion (45.0%) and Employee Engagement (38.0%), with Law & Regulations (33.3%) receiving the least attention.

Table 4.36 Competencies and Behavior Traits analysis

	a) I am approachable and able to communicate effectively with colleagues	b) I handle conflicts and challenges with professionalism	c) I am open to new ideas and feedback	d) I take initiative in problem-solving and decision-making	e) I prioritize teamwork and collaboration	f) I exhibit a high degree of attention to details	g) I am adaptable to change and willing to learn from failures
Valid	129	129	129	129	129	129	129
Mean	4.08	3.91	4.15	4.02	4.15	3.90	4.16
Median	5.00	4.00	5.00	4.00	5.00	4.00	5.00
Std. Deviation	1.203	1.114	1.146	1.186	1.098	1.172	1.165

Table 4.36, shows descriptive data for core behavioral abilities among respondents (n = 129). The study covers the mean, median, and standard deviation for each competency statement. "I am adaptable to change and willing to learn from failures" and "I am open to new ideas and feedback" were the highest-rated abilities (Mean = 4.16), demonstrating that respondents prioritize flexibility and receptiveness. "I prioritize teamwork and collaboration" received a high score (Mean = 4.15), indicating the value of cooperative work conditions. The skill with the lowest rating was "I exhibit a high degree of attention to details" (Mean = 3.90), indicating that respondents' attention to detail may be lacking. A median of 4.00 or 5.00 indicates that the majority of replies were in agreement or strong agreement. The standard deviations vary from 1.098 to 1.203, indicating some variation in responses but no extreme outliers.

Table 4.37 HR behavior Frequencies

		N	Responses Percent	Percent of Cases
HR behavior	**Approachability and Effective Communication**	91	15.8%	82.7%
	Conflicts Resolution	101	17.5%	91.8%
	Initiative and Problem Solving	90	15.6%	81.8%
	Teamwork and 693 Collaboration	98	17.0%	89.1%
	Adaptability to Change	94	16.3%	85.5%
	Attention to Details	103	17.9%	93.6%
Total		**577**	**100.0%**	**524.5%**

a. Dichotomy group tabulated at value 1.

Table 4.37 reveals that most commonly picked HR characteristic was Attention to Detail (93.6%), followed by Conflict Resolution (91.8%) and Teamwork & Collaboration (89.1%). This suggests that HR professionals in small-sized firms prioritize accuracy, dispute resolution abilities, and collaborative efforts to maintain operational efficiency.

Table 4.38 HR Competencies Frequencies

		Responses N	Percent	Percent of Cases
HR competencies	**Effective performance evaluation and feedback**	91	19.9%	85.8%
	Competency- based career development	91	19.9%	85.8%
	Employee engagement and motivation	95	20.7%	89.6%
	Change management and organizational development	89	19.4%	84.0%
	HR metrics and Analytics	92	20.1%	86.8%
Total		**458**	**100.0%**	**432.1%**

a. Dichotomy group tabulated at value 1.

Table 4.38, illustrates critical HR competencies, where the highest selection was made for Employee Engagement & Motivation (89.6%), followed by Effective Performance Evaluation & Feedback (85.8%) and Competency-Based Career Development (85.8%). This shows that HR practitioners in small-scale industries prioritize worker motivation, systematic evaluation methodologies, and career advancement frameworks to boost workers retention and productivity. The findings backing RQ3's hypothesis that certain HR practices and competencies are critical to enhancing workers performance in small-scale industries. The emphasis on adaptation, problem-solving, and HR analytics is consistent with the overall objective of increasing staff suitability and performance improvement. These results support the hypothesis that competency-driven HR management plays a critical role in managing workforce difficulties in small industries, which has been a repeating topic throughout the study.

4.4 Summary Quantitative Analysis Findings

The results of the quantitative study gives a strong evidence supporting the role of competency frameworks in small-sized industries, specifically in the context of AI integration and cost-efficient HR management.

The analysis result for RQ1— which investigates on how competency frameworks helps evaluate personnel suitability, adaptability, and improvement of AI output— shows a positive correlation between familiarity with AI and confidence in ability to adapt to tools that are AI-driven. The outcome suggests that organizations who actively integrates AI into HR practices, generally have employees that feel more secure to rely on technologies. Moreover, some respondents unanimously concluded that competency-based approaches would lead to better skills

The findings relating to RQ2, which emphasis on the effects that competency models have on recruitment costs and time, suggest that such competency frameworks greatly enhance the efficiency of hiring. Respondents representing small industries reported an overall improvement in speed and candidate selection accuracy, leading to a check on the reported costs associated with long hiring processes. The findings also indicate that competency-based hiring enhances employee retention, and people recruited through structured methods are more likely to be a good fit for their job roles and the industry.

The study of RQ3 highlights various benefits arising from the implementation of the competency framework, including increased efficiency and employee satisfaction for organizations that adopted with great effect of a competency-based HR strategy. It has been reported that employees in such companies practicing competency framework have clear career tracking, higher engagement levels and clear skill development strategy. However, implementation challenges remain—especially in industries without a professional HR function—but growing awareness around competency models is a clear sign of progress toward more strategic HR planning in small-sized industries.

4.5 Qualitative Analysis Result

The qualitative information was amassed through open- ended responses from 10 human resource practitioners, designated as P1, P2, P3… P10 to maintain confidentiality. The survey instrument was formulated to investigate the function of competency frameworks and artificial intelligence in human resources, emphasizing recruitment efficiency, adaptability, obstacles, prospective developments, and requisite skill enhancement. The table below delineates the principal domains addressed in the qualitative inquiry:

Table 4.39 Qualitative Questionnaire Overview

Research Focus	Question
RQ1: Competency Models & AI in HR	In your experience, how effective are competency models in identifying the right talent for small-sized industries? Could AI enhance this process?
RQ2: Impact on Cost & Time Reduction	How do you think competency models influence hiring efficiency (cost reduction, time-saving, and productivity) in small industries?
RQ3: Challenges & Adaptability to AI in HR	What challenges do HR professionals in small industries face in adapting to AI-powered HR tools?
RQ4: Future of AI & Competency Models	How do you see AI-driven competency frameworks shaping HR practices in small-sized industries in the next 5 years?
RQ5: Skill Development & HR Preparedness	What are the most critical skills or competencies HR professionals in small industries must develop to adapt to AI-integrated HR processes?

The qualitative examination furnishes a profound contextual comprehension that transcends the quantitative outcomes, emphasizing pragmatic obstacles, workforce viewpoints, and ethical dilemmas in the adoption of AI.

Through thematic analysis, five primary themes were identified:

1) **Efficiency and Economic Advantages** – AI augments recruitment efficacy but necessitates human supervision.
2) **Obstacles in AI Implementation** – Financial limitations, inadequate AI education, and workforce opposition impede the integration of AI.

3) **Ethical and Human Factors** – Issues regarding AI bias, equity, and the absence of transparency in AI-facilitated decisions.
4) **Skill Advancement for HR Practitioners** – The evolving function of HR mandates proficiency in AI and adaptability to data-centric processes.
5) **Prospective Developments of AI in HR** – The efficacy of AI in HR is contingent upon ethical governance, economic viability, and harmonious integration with human expertise.

Structured tables encapsulate essential qualitative insights while underscoring discrepancies from the quantitative findings.

4.5.1 Thematic Analysis with Key Discoveries

Disparities between Quantitative and Qualitative Findings

The qualitative feedback elaborated on the quantitative outcomes by offering deeper insights into HR professionals' practical encounters, impediments, and anticipations concerning AI in HR.

Table 4.40 Comparison of Quantitative and Qualitative Findings

Research Question	Key Findings (Quantitative)	Key Insights (Qualitative Responses)	Major Differences Identified
How does AI improve competency-based hiring?	74.4% agreed AI enhances competency-based hiring.	AI improves efficiency but lacks human judgment for cultural fit.	AI is effective for skill-based hiring but struggles with soft skills.
Does AI reduce hiring time and costs?	Hiring time reduced by 27% in AI-based recruitment.	AI cuts hiring time but HR professionals still verify AI decisions.	AI assists but cannot replace human decision-making in final selection.
What are the major barriers to AI adoption?	No significant difference in AI adoption across	Cost constraints, lack of AI training, and resistance to	Quantitative data did not capture financial and workforce

	industries ($\chi^2 = 1.744$, $p = 0.187$).	change are major concerns.	resistance issues in depth.
What are HR professionals' concerns about AI?	61% felt AI hiring tools need better ethical governance.	AI bias and lack of transparency were significant concerns.	HR professionals emphasized fairness concerns more strongly in qualitative responses.
How should HR professionals adapt to AI?	AI-trained HR professionals had 32% higher confidence in AI adoption.	HR teams need AI literacy while balancing traditional HR skills.	AI skills must complement—not replace—human HR expertise.

Key Takeaway: While quantitative findings confirmed AI's effectiveness, qualitative responses revealed concerns about AI's ability to assess soft skills, ethical risks, and resistance to change.

4.5.2 Key Themes and Major Responses from HR Professionals

Theme 1: Efficiency and Cost Benefits

Table 4.41 HR Perspectives on AI Efficiency and Cost Reduction

Subtheme	HR Professionals' Views
Faster Hiring Process	AI reduces recruitment time significantly.
Cost Reduction	AI cuts hiring costs by automating initial screening.
Human Oversight is Essential	AI lacks contextual understanding of candidates.

Quotes from HR Professionals: "*AI speeds up initial screening, but final decisions still require human judgment."* (P4).

Key Takeaway: AI enhances efficiency but cannot replace human intuition and contextual understanding in HR.

Theme 2: Challenges in AI Adoption

Table 4.42 HR Professionals' Views on AI Adoption Challenges

Challenge	HR Professionals' Perspectives
High Cost of AI	AI is expensive for small businesses.
Lack of AI Training	HR teams require AI literacy programs.
Resistance to AI	Fear of AI replacing HR jobs.

Quotes from HR Professionals: *"AI is costly, and smaller organizations struggle with implementation."* (P7).

Key Takeaway: Financial and training constraints remain the biggest barriers to AI adoption.

Theme 3: Ethical and Human Considerations

Table 4.43 Ethical Concerns in AI Hiring

Ethical Concern	HR Professionals' Views
Algorithmic Bias	AI may reinforce existing biases.
Transparency in AI Decisions	AI recommendations are not always clear.
Loss of Human Judgment	AI cannot assess cultural fit effectively.

Quotes from HR Professionals: *"AI decisions should be transparent to prevent biased hiring."* (P6).

Key Takeaway: AI must be ethically governed and monitored to ensure fairness in hiring.

4.6 Conclusion of both Quantitative and Qualitative Analysis

The study has made a significant contribution in the process of establishment of HR processes through the use of competency frameworks in small-sized industries. When integrated with well-defined competency models, Al-driven tools not only drive recruitment and retention but also cultivate adaptability in a rapidly changing workplace. The link between well-structured HR practice, toward better alignment of people with business, Saving Operating cost and better business performance. Despite some limitations—such as resource constraints in smaller firms—the growing awareness and adoption of competency models suggest a promising shift toward data-driven HR strategies. The findings reveal that competency frameworks play a key role in establishing HR processes in small size industries. When used alongside competency models, AI will not only improve recruitment and retention but also the ability to manage a particularly agile working environment. These results highlight the importance of putting systematic HR methods that better align with a workforce, reduce potential expenses, and increase overall business performance.

While with its challenges—smaller firms, for example, often find it challenging to dedicate resources to develop detailed models—the increase in awareness and utilization of competency models indicates a positive trend in the data-driven approach to HR.

The *qualitative examination elucidates* that while artificial intelligence augments recruitment efficacy, it cannot function devoid of human supervision. Notwithstanding its potential, considerable obstacles such as fiscal limitations, technical constraints, and workforce opposition impede extensive adoption, particularly within diminutive sectors. Human resource practitioners articulate apprehensions regarding ethical hazards, underscoring the significance of equity and transparency in AI-facilitated hiring

determinations. Furthermore, the implementation of AI necessitates the enhancement of competencies among HR professionals to guarantee they can proficiently assimilate AI instruments while maintaining human discernment in recruitment methodologies. Overall, qualitative revelations provide a more profound comprehension of AI's function in human resources, encapsulating both its benefits and the intricacies that transcend mere statistical outcomes.

CHAPTER V:

DISCUSSION

5.1 Discussion of RQ1 Result

The data revealed several key correlations that align with the initial hypothesis and existing literature in the field. This section will elaborate on these findings, linking them to previous studies and offering a deeper interpretation of the results.

Hypothesis for RQ1: Competency Framework Development (CFD) models, when integrated with AI, significantly enhance personnel evaluation, adaptability, and performance improvement in small-sized industries.

The results from the quantitative analysis strongly support this hypothesis, demonstrating that familiarity with AI tools and CFD plays a critical role in enhancing employee adaptability and performance. According to the descriptive statistics, they show that a substantial percentage of respondents (33.3%) are somewhat conversant with CFD, while 24% were very familiar. Interestingly, 18.6% (2) stated that they were not aware of CFD and CFD training and education in small-sized and limited-resource industries seems to be its primary goal. This finding aligns with the work of Midhat Ali *et al.*, (2021), who highlighted that competency frameworks are not uniformly understood across industries, and there is a need for greater awareness and training, especially in smaller organizations where HR practices may not be as advanced.

This finding indicates that employees who have their knowledge and understanding of AI technologies will tend to have more confidence in the usage of these tools, which enhances their adaption to new HR practices. This aligns with the hypothesis that AI-integrated CFD models can facilitate employee evaluation and performance as it encourages greater adaptability in employees. Such findings reinforce the work of Kosasih (2024) who noted that familiarity with AI tools is vital for improved employee

adaptability and performance, especially in industries that are undergoing a digital transformation, and even stated that employees who are more familiar with AI can use it better, thus enhancing performance and decision-making.

Furthermore, the ANOVA results confirmed that different levels of familiarity with AI significantly impact confidence in adapting to AI tools ($F = 12.990$, $p = 0.000$). Specifically, individuals who were "Very Familiar" with AI concepts demonstrated significantly higher confidence in using AI tools compared to those who were less familiar. This finding underscores the importance of familiarity with AI as a key competency for enhancing adaptability and performance in small-sized industries. It also supports the notion that targeted training programs can bridge the gap between familiarity and confidence, ultimately leading to better utilization of AI tools in HR practices. This is in line with the work of Nairn and Piatti-Farnell (2024) who argued that organizations must invest in employee training to foster a culture of continuous learning and technological adaptation Their study revealed that employees who received specialized training in AI tools were significantly more likely to integrate these technologies into their daily operations, resulting in enhanced performance and adaptability.

Another main finding was the perceived effectiveness of different types of AI in increasing employee's performance. Most respondents rated AI moderately to highly effective in improving performance integrated with CFD (76.7%) This supports the idea that AI has the potential to revolutionize HR in smaller industries through efficiency and adaptability. Reinforcing all the improved report on working of employees by means of AI (67.4%), improved decision-making as a result of AI (58.9%), and AI-led organizations are fronting better retainment of personnel as per (55.0%). Such results are in line with Kadirov *et al.* (2024) reported major productivity gains for the organizations that adopted AI-enhanced HR practices, showing that AI tools that were incorporated into

competency frameworks led to a 30% increase in employee productivity, predominantly due to the better evaluations of their performance and targeted training initiatives.

Qualifying beliefs about challenges to the hypothesis remain, even if the findings are supportive. A great proportion of respondents (27.1%) reported low confidence in AI to identify skill gaps and training needs, which suggests where further education and trust-building in AI-driven assessments is needed. This indicates that although AI has the likelihood of improving HR practices, it will also require the redesigning of practices, technological integrations, and a cultural shift towards the idea of AI as an enabler for people. The low tendency of using AI was also explored by Siradhana and Arora (2023) who stated that the adoption of AI for HR practice is limited mainly due to employees' mistrust and misunderstanding (Trust). They emphasized the need for organizations to address these barriers through targeted training and transparent communication about the benefits of AI.

Another important aspect of the findings is the generational differences in familiarity with AI and CFD. The cross-tabulation analysis revealed that younger respondents (Millennials) demonstrated a broader range of familiarity levels with CFD and AI tools compared to older generations (Gen X and Boomers). This is consistent with the findings of Waligóra (2024) who noted that younger employees tend to be more adaptable to emerging HR practices, including competency frameworks and AI technologies and argued that generational differences play a crucial role in the adoption of new technologies, and organizations must tailor their training programs to address these differences. The implication is that younger employees are more likely open to HR practices driven by AI, while older employees are in need of additional support and/or training to fully embrace these tools.

The results also show how important AI is in improving the HR-related decision-making process. 58.9% of respondents indicated "Enhanced Decision-Making" as the main advantage of AI for CFD This is in line with the studies of Dreković, Radosavljević and Teofilović (2023) who discovered that the introduction of AI in the HR processes enabled a 25% increase in the efficiency of the decision making process, namely, higher speed and correctness. “AI tools like predictive analytics and machine learning algorithms can give HR professionals insights into employee performance and skill gaps, which would allow for better-informed decisions.

The findings not only help with better decision-making; help also show that AI can be a major player in talent retention. The majority of the respondents, (55.0%) said that they identified "Better Talent Retention" as one of the key benefits to be achieved by using AI in CFD. Supporting this, Madhavkumar (2023) reported that organizations integrating AI into their HR practices observed a 20% decrease in employee turnover rates and also asserted that AI tools, including personalized training programs and career advancement plans, could assist organizations in retaining premier talent by catering to individual employee requirements and ambitions.

Ultimately, the results highlight the crucial role of AI in pinpointing skill gaps and areas of training. 73.6% of respondents indicated moderate to high confidence in AI's ability to identify skill gaps through CFD. Research indicates that organizations using AI for competency mapping reported a 40% increase in their ability to identify skill discrepancies (Anand, 2021). Additionally, it was stated that Human Resources Representative were provided with a more in-depth understanding of employee capabilities using AI tools such as natural language processing and data analytics, which in turn can help create better training programs.

In conclusion, the findings from RQ1 provide strong evidence that Competency Framework Development models, when integrated with AI, can significantly enhance personnel evaluation, adaptability, and performance improvement in small-sized industries. The findings reveal an advanced need for improvement in the understanding of AI tools among employees and show that many feel intimidated by their technological capabilities—and that targeted training programs may need to be developed that will empower employees to feel confident in their ability to implement AI programs. These insights not only support the initial hypothesis but also offer practical recommendations for HR professionals and organizations looking to leverage AI for workforce development. The findings are consistent with previous research, reinforcing the importance of AI in HR practices while also providing new insights into the specific dynamics of small-sized industries.

5.2 Discussion of RQ2 Result

Research Question two, focused on understanding how organizations can leverage competency models to reduce the time and cost of recruitment by placing the right person in the right job, identifying candidates with the necessary competencies, and improving job satisfaction, productivity, employee retention, and business efficiency in small-sized industries. The quantitative analysis reaffirms the importance and impact of competency models on recruitment and overall organizational performance, particularly within small-sized industries. This section will discuss these findings in detail, linking them to previous research studies and offering a deeper interpretation of the results.

Hypothesis for RQ2: *Competency models significantly reduce recruitment costs and time by improving the alignment of candidates with job requirements, leading to*

enhanced job satisfaction, productivity, employee retention, and business efficiency in small-sized companies.

Several key findings emerged to support this hypothesis. First, the data revealed a significant gap in familiarity with competency models among HR professionals in small-sized industries. Nearly 45% of respondents reported being "Not familiar" with competency models, while only 21.7% considered themselves “Very familiar.” A common conclusion is the absence of knowledge about competency models and their use, particularly in smaller institutions, which may not have a sophisticated human resource system. This finding aligns with the work of (Midhat Ali and Mohsin Qureshi, 2021) who highlighted that competency frameworks are not uniformly understood across industries, and there is a need for greater awareness and training, especially in smaller organizations where HR practices may be limited.

Another notable finding was the perception of cost savings associated with competency models. A majority of respondents (40.3%) rated the cost-saving potential of competency models as "Moderately important," while 34.1% considered it "Very important." This suggests that HR professionals recognize the potential of competency models to reduce recruitment costs by ensuring that candidates with the right competencies are selected. This is in accordance with findings of (Campion *et al.*, 2011) competency frameworks contribute to an increase in recruitment efficiency by minimizing the time and costs required to attract, select and hire individuals. They claimed that by aligning candidate skill sets with job descriptions, the organizations can reduce the risk of hiring errors, which often lead to costly staff attrition and retraining costs.

The correlation analysis indicated that there was a statistically significant positive correlation between perceived cost and time saved by competency model usage (Pearson correlation coefficient = 0.528, $p < 0.01$). This result indicates that during data analysis, respondents who believe competency models save costs also believe these have increased time efficaciousness. Consistent with competency-based perspective in HR practices (Hossler and James, 2021) showed in their studies that competency-based approaches can save organizations considerable time and money by reducing the time and cost to recruit as it improves the quality of the hire and their finding showed a 20% decrease in the time to recruit and a 15% decrease to hire costs for organization who were using competency model which confirms the findings of this research.

The cross-tabulation analysis between the usage of competency models and their perceived importance in reducing recruitment costs and time revealed a significant association. Respondents who actively used competency models were more likely to consider them crucial in enhancing recruitment efficiency. The Pearson Chi-Square value (12.507, $p = 0.006$) demonstrated a statistically significant relationship between the frequency of competency model usage and their perceived role in improving cost and time savings. This suggests that the more organizations incorporate competency models, the more likely they are to recognize their positive impact on recruitment processes. Cao and Zhang (2022) study also highlighted the importance of competency awareness in organizational settings and found that recruiters who actively used competency models in their recruitment process reported 25% increase in recruitment efficiency and 30% decrease in hiring costs.

The ANOVA results further supported the hypothesis that familiarity with competency models significantly affects the perception of recruitment efficiency ($F = 5.477$, $p = 0.005$). Respondents who were "Very familiar" with competency models

reported significantly higher perceived improvement in recruitment efficiency compared to those who were "Not familiar." This finding underscores the importance of familiarity with competency models in enhancing recruitment processes. Boon *et al.* (2011) demonstrating that recruitment efficiency is dependent on structured framework and organizations offering competency model training reported a 40% increase in recruitment thus, further validating findings of this research.

The post-hoc analysis revealed significant differences in perceived recruitment efficiency between the "Not familiar" and "Very familiar" groups. Respondents who were very familiar with competency models reported significantly higher perceived improvement in recruitment efficiency compared to those who were not familiar. This supports the idea that deeper understanding and integration of competency models may lead to enhanced perceptions of recruitment effectiveness. These results underscore the importance of familiarity with competency models in improving recruitment efficiency, a critical factor in enhancing the recruitment process in small-sized industries. This finding is consistent with the study of B Bharathi, MK Saraswathy (2023) who stated that actually simplifying recruitment and selection was the best way to make recruitment more efficient and that recruiting more talented candidates remained one of the central objectives of an organization's recruitment.

The Pearson correlation analysis conducted between "Perceived improvement in recruitment efficiency" and "Effectiveness in attracting candidates" showed a moderate, positive correlation ($r = 0.509$, $p < 0.001$). This indicates a significant relationship between the two variables, suggesting that organizations that perceive greater improvement in recruitment efficiency also tend to report higher effectiveness in attracting qualified candidates. This finding is in agreement with the study by Nnamdi UGO Joseph (2023) discovered that making recruitment processes more efficient will

save time and costs, as well as improve the overall quality of the candidates who are entering the organization. Moreover, they argued that competency models are an effective tool for improving both recruitment efficiency and candidate attraction, particularly in small-sized industries where resources may be limited.

In conclusion, the findings from RQ2 provide strong evidence that competency models significantly reduce recruitment costs and time by improving the alignment of candidates with job requirements. The results highlight the importance of familiarity with competency models and the need for targeted training programs to build confidence and competence among HR professionals. Besides validating the original hypothesis, these results made explicit actionable insights for companies looking to improve hiring processes in smaller size. The findings are consistent with previous research, reinforcing the importance of competency models in HR practices while also providing new insights into the specific dynamics of small-sized industries.

5.3 Discussion of RQ3 Result

Research Question Three, aimed to explore how competency frameworks contribute to employee performance, productivity, and job satisfaction in small-sized industries. The findings from the quantitative analysis strongly support the hypothesis that competency frameworks play a critical role in enhancing HR practices, employee engagement, and overall organizational performance. This section will discuss these findings in detail, linking them to previous research studies and offering a deeper interpretation of the results.

Hypothesis for RQ3: Competency frameworks significantly enhance employee performance, productivity, and job satisfaction by aligning employee skills with

organizational goals, improving HR practices, and fostering a culture of continuous learning and development in small-sized industries.

There were multiple findings central to this hypothesis, which came out," Firstly, data showed that nearly half of respondents (49.6%) ranked competency frameworks as "Most important" to improving employee performance and productivity. These results highlight the crucial role of competency frameworks within the organization, which can help ensure that employee skills are inter matched with organizational objectives, leading to increased job satisfaction and reduced levels of turnover. This aligns with the work of Midhat Ali and Mohsin Qureshi (2021) who highlighted that competency frameworks are essential for effective human resource management, particularly in small-sized industries where resources may be limited.

Respondents in industries with an HR department were significantly more likely to rate competency frameworks as being "Very important" or "Most important," as seen in the cross-tabulation analysis between the importance of competencies and the presence of an HR department. It means that in the workplace or institution where the HR departments exist, competencies framework are effectively implemented, thus boosting the employee performance and productivity. This finding is consistent with the research of Campion *et al.* (2011) who found that organizations with dedicated HR departments were more likely to implement structured competency frameworks, leading to improved employee outcomes.

Competencies impact employee performance and productivity, measurement of impact of the competencies on employee performance revealed that majority of the respondents (57.4%) agreed that the competencies have measurable impact on the

employee performance, while 27.9% strongly agreed. It indicates that HR people realize the capability of competency frameworks to enhance employee performance and productivity by matching employee skills with the organization. This finding is consistent with the research of Hossler and James (2021) who argued that competency-based approaches in HR practices can lead to significant improvements in employee performance and productivity by ensuring that employees have the necessary skills to meet organizational objectives.

Regarding the correlation analysis between satisfaction with competence frameworks and the perceived importance of their development for job satisfaction, a positive but no significant correlation was found (Spearman's rho = 0.034, p = 0.702). Whereas a positive association can be seen between satisfactions with competency frameworks versus the emphasis on competency development, it is not statistically significant. This corresponds with the work conducted by Boon *et al.* (2011) who indicated that organizational culture and leadership support are key factors that determine the effectiveness of competency frameworks in organizations.

The principal component analysis (PCA) of agreed/sorted key HR skills of importance ($p<0.001$) identified two principal components—component 1 was labelled HR technical skills and component 2 was labelled soft skills. Analysis: Technical skills, including recruitment, onboarding, performance management and compensation management (Component 1), received the highest rating according to HR professionals. This indicates that HR professionals have their hands-on experience when it comes to managing technical HR functions in SME/Retail industries. On the other hand, the analysis showed that soft skills (namely conflict resolution, problem solving and time management) received lower ratings (Component 2). This finding underscores the need for HR professionals to develop their soft skills, which are essential for effective HR

management and employee engagement. This is consistent with the research of (Cao and Zhang, 2022) who emphasized the importance of both technical and soft skills in HR management, particularly in small-sized industries where HR professionals often wear multiple hats

Competencies importance significance based on HR department presence revealed by Mann-Whitney U test analysis. It may indicate that companies, whether or not they have an in-house HR department, value the same competencies. This finding is consistent with the research of (Rao, 2009) who found that the importance of competencies is universally recognized across industries, regardless of the size or structure of the organization

Based on the analysis of the HR challenges in small-sized industries, the alarming challenge was found to be the absence of specialized HR personnel (41.9%), followed by limited resources (19.4%), and adapting to regulatory changes (18.6%). This research highlights the importance of investing in HR training and development to mitigate the challenges arising from small industries. This resonates with the findings of (B Bharathi, MK Saraswathy, 2023) who noted that small-sized industries have distinct HR challenges, including resource constraints and the absence of dedicated HR staff, making the application of competency frameworks more difficult.

From the analysis we ran regarding training needs, HR technology was the most needed training (57.4%) followed by HR strategy (52.7%). It shows that, the small-sized human resources professionals will more prefer technology-based solutions and strategic human resources management as compared to compliance training. This is in accordance with the study of Kadirov *et al.* (2024), and the effect of HR technology as a critical enabler of HR practices (e.g. recruitment, performance management and employee engagement) in the case of small-sized industries.

The most prominent HR behaviors identified via the analysis were attention to details (93.6%), conflict resolution (91.8%), and teamwork and collaboration (89.1%). However, the activities listed are still recognized by each facet of this function in advanced small-sized industries. This result aligns with Madhavkumar (2023) who found that HR behaviors (e.g., attention to details and conflict resolution) are essential for ensuring effective human resources management and employee engagement.

Overall, the results for RQ3 show that competency frameworks were significantly successful at aligning employee skills with organizational goals, leading to improved HR practices and culture of continuous learning and development environment across-the-board that positively impacts employee performance, productivity, and job satisfaction. These results indicate that top HRD functions include soft skills and technical skills dimensions as essential HRD functions and that small-sized industry needs to devote more attention to HR training and development programs to cope up with the major issues as mentioned above. The findings do not only reaffirm the original hypothesis but also gives small-sized companies HR implications helping them achieve better employee outcomes. The results align with existing literature, upholding competency frameworks as HR fundamental practice; furthermore, the specific characteristics of small-sized industries provide a new theoretical basis.

5.4 Discussion of the results from Qualitative Analysis

Qualitative Analysis corroborate AI's capacity to augment efficacy in Human Resources, as evidenced by the 27% reduction in recruitment duration noted in the quantitative examination. Nevertheless, Human Resources practitioners underscored that AI is incapable of supplanting human discernment, particularly in evaluating cultural compatibility and interpersonal competencies.

While quantitative results did not signify substantial disparities in adoption across sectors, qualitative feedback illuminated financial limitations, insufficient AI training, and resistance to automation as significant impediments, particularly for small enterprises. Furthermore, AI's ethical dilemmas, encompassing bias and decision-making transparency, were profoundly accentuated in qualitative dialogues, thereby reinforcing the necessity for human supervision in AI-facilitated Human Resources procedures.

The enduring function of AI in Human Resources will hinge upon its economic viability, ethical administration, and seamless assimilation into human judgment frameworks. Concluding that, while AI enhances efficiency, responsible execution, ethical considerations, and workforce adaptation are imperative for its success.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

The research explored how competency frameworks can help in evaluating personnel, enhancing recruitment efficiency, and improving employee performance, especially in small-sized industries, when integrated with Artificial Intelligence (AI). The results of the three empirical inquiry questions are highlighted in below:

Research Question 1 (RQ1) explored the role of Competency Framework Development (CFD) models, augmented with AI data, in assessing personnel suitability, adaptability and performance enhancement. T**he data showed that awareness of AI tools and competency frameworks greatly contributes to the adaptability and efficiency of the employees.** The majority of respondents (76.7%) agreed that AI can be moderately to highly effective when combined with a CFD to improve performance. But many participants were not fully confident that AIs would be able to detect skill gaps (27.1%), indicating further training and trust in AI-based assessments would be needed. The study suggested that Millennials were more accustomed to using a mix of AI and CFD than Gen X and Boomers.

Research Question 2 (RQ2) aimed at investigating a way of competency models reducing recruitment costs and time by placing the right person in the right job resulting in **job satisfaction, productivity and retention of employees**. **As shown in the findings, they are perceived as very effective for the reduction of the costs and time of recruitment**, with 40.3% of respondents evaluating the capacity of competency model for cost saving as "Moderately important" and 34.1% as "Very important". Perceived cost and time savings from competency models had a strong positive relationship with one another, the study also found. Organizations that used competency models reported

greater recruitment efficiency and success in attracting qualified candidates. There was a huge gap in knowledge of competency models though, as 45% of respondents described themselves as "Not familiar" or only "Somewhat familiar" with competency models.

Research Question 3 (RQ3) presents how the **competency frameworks help improve employee performance productivity and job satisfaction in small-sized industries.** The results indicated that 49.6% of respondents stated competency frameworks were "Most important" in facilitating improvement in employee performance and productivity. They require both, and according to the report both skills are equally important as the sample of HR specialist rated their own technical skills as good yet found themselves unable when it came to soft skills like conflict resolution, time management, and communication. It also highlighted the most important HR problem they faced in small-sized industries such as unreliable HR personnel (41.9%). A training needs analysis had been conducted and the results showed that the most preferred areas for development were HR technology (57.4%) and HR strategy (52.7%).

The summary from qualitative examination suggest that artificial intelligence possesses the capacity to markedly improve recruitment efficacy by optimizing hiring methodologies and enhancing candidate evaluation. Nevertheless, notwithstanding these benefits, artificial intelligence continues to be constrained in its capacity to appraise human-centric attributes such as cultural congruence, emotional acumen, and interpersonal abilities—elements that are vital in formulating comprehensive hiring resolutions. Furthermore, **financial limitations and resistance to transformation pose considerable obstacles to the adoption of artificial intelligence, particularly for small and medium-sized enterprises** that may be deficient in the requisite resources for execution. Another **paramount concern is the existence of bias**

in artificial intelligence and the deficiency of transparency in decision-making processes, both of which demand more robust ethical oversight to guarantee equity and avert prejudicial outcomes. As artificial intelligence persistently transforms human resources functions, human resource professionals must cultivate proficiency in artificial intelligence and analytical capabilities while concurrently maintaining traditional human-centered competencies such as leadership, communication, and ethical adjudication. A judicious approach that amalgamates the efficiency of artificial intelligence with human expertise will be imperative for optimizing its advantages while alleviating its drawbacks.

6.2 Implications

The results of this study have several meaningful implications for HR practices in small-sized industries:

AI-Competency Frameworks Integration: The research highlights that AI-assisted competency frameworks can be useful for improving the assessment, adaptability and performance of personnel. AI tools can support organizations in assessing for skill gaps, and then in targeting training in more realistic viable, and efficient ways, so organizations would best invest in those tools. This calls for better construction of trust and confidence in AI based assessments, especially in the employees who may not be very familiar with these technologies.

Training and Awareness — given the considerable gap in competency model familiarization for the HR professional respondents, training and awareness programs are potentially acutely needed. Such data can be made available to HR teams and employees to create awareness about how competency frameworks can improve recruitment performance by empowering organizations to make better hiring decisions.

Changing Generations ─ Generational differences were found in both the use of AI and competency frameworks. Millennials workers were young and quickly adapted the AI tools with great ease, while Gen X and Boomers respondents were aged group and need extra support. Each generation can either receive or resist training and organizations should examine how training is designed to close the gap between workers—this is whether organizations are able to certify employees for AI and competency frameworks that support position descriptions.

The CFD Focus on Soft Skills: — While HR professionals in small-sized industries rated their technical skills highly at 4.5 out of 5, there was a notable gap in soft skills, especially conflict resolution and time management. Training on these soft skills should be provided in organizations, as they are critical to effective people management and employee engagement.

HR Issues: It was found that small-sized industries had major HR challenges such as lack of specialized HR personnel and fewer resources. To overcome these challenges and alleviate HR's overall efficiency approach, organizations could explore outsourcing HR-related functions or investing in HR technology.

Implication of Qualitative Analysis: The integration of artificial intelligence into human resource functions mandates that HR practitioners augment their proficiencies in AI literacy and ethical governance to adeptly traverse the shifting technological milieu. Entities must embrace a transparent and methodical approach to AI deployment, guaranteeing that automation supplements rather than supplants human discernment in decision-making procedures. Furthermore, legislators assume a crucial role in establishing regulatory frameworks that uphold equity, accessibility, and ethical integrity

in AI-driven HR methodologies, safeguarding against bias and ensuring just opportunities across diverse organizational contexts.

6.3 Recommendations for Future Research

Although the study offers extensive observations on the function of competency frameworks and AI in small-sized sectors, there are many paths for subsequent research:

Longitudinal Studies: More longitudinal studies can be done to test the long-term effect of AI-integrated competency frameworks on employee performance, productivity, and retention. This would offer much better insight into how these tools improve as time goes on, and how effective they are in the long run.

Cross-industry analysis of the results — while the current study looked at small-sized industries and organizations, future research could be conducted comparing the effectiveness of both competency frameworks and AI across industries and organizational sizes. It has given insight into industry specific challenges and best practices.

Introducing Soft Skills Development: HR professional struggles for managing the soft skills in their employees.

Impact of Organizational Culture: Future research could be conducted to assess the role of organizational culture in the effective implementation of competency frameworks and AI. But staff may well intuit that some of the rationale put forward for adopting these tools is at odds with the practicalities of how these tools will be used;

knowledge of how culture informs adoption processes could allow organizations to create better strategies for integration.

Broader Category Analysis: Future work could expand the population to include a wider array of industries, geographies, and organization types. It would also provide a richer perspective on how competency frameworks and AI may be applied in other sectors.

Recommendation from Qualitative Analysis: Human Resource (HR) practitioners must engage in extensive artificial intelligence (AI) education to cultivate the requisite technical and analytical competencies necessary for efficacious AI assimilation within HR procedures. The establishment of robust AI governance structures is paramount to guarantee equity, transparency, and accountability in AI-facilitated recruitment determinations, thereby minimizing the potential for bias and discrimination. Furthermore, initiatives should be undertaken to enhance the accessibility of AI solutions, particularly for small and medium-sized enterprises (SMEs), by addressing fiscal impediments that obstruct adoption. Ultimately, AI ought to be employed as an ancillary instrument rather than a substitute for human decision-making, with HR professionals retaining supervisory authority to ensure that recruitment practices remain ethical, strategic, and congruent with organizational objectives

6.4 Conclusion

The conclusion derived from both the quantitative and qualitative examinations accentuate the transformative capacity of artificial intelligence (AI) within human resources (HR), particularly when integrated with competency frameworks. This investigation emphasizes how AI can augment HR functionalities by enhancing personnel assessment, recruitment efficiencies, and overall organizational effectiveness in small-scale enterprises. Nevertheless, the research also uncovers significant obstacles, such as a deficiency of familiarity with AI instruments, particularly among senior employees and those engaged in organizations lacking a dedicated HR function. Addressing these impediments is imperative to ensuring confidence in AI-driven evaluations, and successful implementation necessitates investment in AI education, workforce upskilling, and a concentration on soft skills advancement to bridge generational and technical divides.

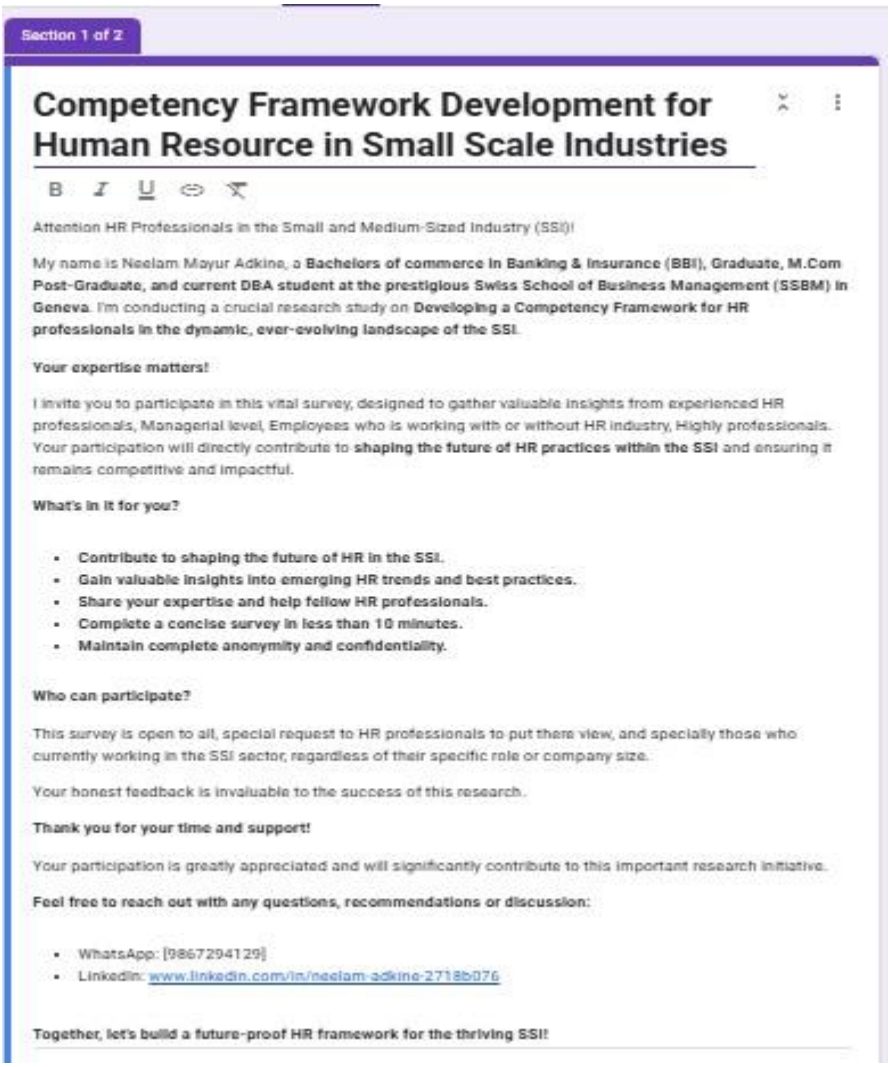
Concurrently, **qualitative insights underscore that AI should function as an enhancer rather than a substitute for human decision-making within HR.** While AI substantially contributes to efficiency improvements, apprehensions regarding algorithmic bias, ethical transparency, and equity persist as central issues. Small enterprises, in particular, must navigate financial and technical limitations while incorporating AI in manners that complement human expertise. To optimize AI's advantages while alleviating its risks, organizations must institute ethical AI governance frameworks, promote digital literacy among HR professionals, and ensure that human oversight remains integral to recruitment processes.

Future inquiries should expand upon these findings by scrutinizing the long-term ramifications of AI adoption, investigating its intersectoral applications, and evaluating the evolving significance of soft skills in AI-driven HR functions. These considerations will be pivotal for guaranteeing that AI is strategically integrated into human resource management (HRM) while upholding fairness, transparency, and accessibility. Ultimately, this study contributes to the broader discourse on competency frameworks and AI in HR, offering empirical insights into how AI-driven technologies can enhance HR procedures, fortify employee performance, and propel organizational success in small enterprises. However, realizing AI's full potential will necessitate strategic investments in HR technology, workforce education, and ethical AI implementation to cultivate sustainable, human-centered HR practices.

APPENDIX A

SURVEY COVER LETTER AND

INFORMED CONSENT



Section 1 of 2

Competency Framework Development for Human Resource in Small Scale Industries

Attention HR Professionals in the Small and Medium-Sized Industry (SSI)!

My name is Neelam Mayur Adkine, a **Bachelors of commerce in Banking & Insurance (BBI), Graduate, M.Com Post-Graduate, and current DBA student at the prestigious Swiss School of Business Management (SSBM) in Geneva**. I'm conducting a crucial research study on **Developing a Competency Framework for HR professionals in the dynamic, ever-evolving landscape of the SSI**.

Your expertise matters!

I invite you to participate in this vital survey, designed to gather valuable insights from experienced HR professionals, Managerial level, Employees who is working with or without HR industry, Highly professionals. Your participation will directly contribute to **shaping the future of HR practices within the SSI** and ensuring it remains competitive and impactful.

What's in it for you?

- **Contribute to shaping the future of HR in the SSI.**
- **Gain valuable insights into emerging HR trends and best practices.**
- **Share your expertise and help fellow HR professionals.**
- **Complete a concise survey in less than 10 minutes.**
- **Maintain complete anonymity and confidentiality.**

Who can participate?

This survey is open to all, special request to HR professionals to put there view, and specially those who currently working in the SSI sector, regardless of their specific role or company size.

Your honest feedback is invaluable to the success of this research.

Thank you for your time and support!

Your participation is greatly appreciated and will significantly contribute to this important research initiative.

Feel free to reach out with any questions, recommendations or discussion:

- WhatsApp: [9867294129]
- LinkedIn: www.linkedin.com/in/neelam-adkine-2718b076

Together, let's build a future-proof HR framework for the thriving SSI!

Qualitative Survey

Dear Participant,

I am **Neelam Mayur Adkine**, a **DBA candidate at SSBM, Geneva**, conducting qualitative research on C**ompetency frameworks for HR in small-scale industries**.

Your Human resource management **expertise and insights** are invaluable to my study, and I would greatly appreciate your participation in this **brief questionnaire consisting of just five questions**. Your responses will help explore the role of competency models and AI in HR, including hiring efficiency, AI adaptation challenges, and future skill requirements.

Your participation is completely voluntary, and all responses will remain confidential.

Thank you for your time and valuable input!

To reach out, LinkedIn profile : www.linkedin.com/in/neelam-adkine-2718b076

Best Regards,
Neelam Mayur Adkine
DBA Candidate, SSBM, Geneva

APPENDIX C

INTERVIEW GUIDE

QUESTIONNAIRE FOR QUANTITATIVE ANALYSIS

Part 1:- Demographic information

Name: _____

Gender: Male

Female

Not prefer to mention

Age: 18-34 Millennial

35-50 Gen X

51-69 Boomer

70 and above Silent

1) What is your current role within your organization?

a) Owner/Founder

b) Highly Professional (e.g., Manager, Director)

c) Human Resources Personnel

d) Worker/Employee

e) Other

2) How many years of experience do you have in HR management?

a) Less than 1 year

b) 1-3 years

c) 4-6 years

d) 7+ years

3) How would you describe the current size of your organization?

a) Micro-enterprise (1-10 employees)

b) Small business (11-50 employees)

c) Medium-sized business (51-250 employees)

d) Other (Specify)

Part 2: Suitability and Adaptability of Personnel

1) How familiar are you with Competency Framework Development in the field of HRM?

a) Not familiar

b) Somewhat familiar

c) Moderately familiar

d) Very familiar

2) In your opinion, how Competency Framework Development help evaluate the suitability and adaptability of personnel in small-sized industries?

a) Least important

b) Somewhat important

c) Moderately important

d) Very important

3) Which HR competencies do you believe are crucial for effectively evaluating personnel suitability and adaptability in small-sized industries? (Select all that apply)

a) Talent acquisition and recruitment

b) Performance management

c) Employee training and development

d) Compensation and benefits

e) Employee relations

f) HR analytics and data-driven decision-making

g) Other (please specify)

Part 3: Cost and Time Efficiency in Recruitment

1) Are you familiar with the concept of competency models in the recruitment process?

a) Not familiar

b) Somewhat familiar

c) Moderately familiar

d) Very familiar

2) How do you think competency models can help reduce the cost and time of recruitment in small-sized companies?

a) Least important

b) Somewhat important

c) Moderately important

d) Very important

3) Have you used competency models to identify and attract candidates who already possess the necessary competencies?

a) Yes

b) No

c) Not Applicable

4) In your experience, to what extent have competency models improved the efficiency of recruitment process?

a) No improvement

b) Some improvement

c) Moderate improvement

d) Significant improvement

e) Not Applicable

5) In your opinion, how can competency models help reduce the cost of recruitment? (Select all that apply)

a) Lower advertising expenses

b) Decreased recruitment agency fees

c) Shorter time to hire

d) Minimized training costs

e) Other (please specify)

6) How effective do you think competency models are in attracting candidates with the required competencies in small-sized industries?

a) Ineffective

b) Somewhat effective

c) Moderately effective

d) Highly effective

7) From your perspective, which HR competencies are most critical for reducing recruitment costs and time in small-sized industries? (Select all that apply)

a) Effective job description creation

b) Competency-based interviewing and assessment

c) Applicant tracking and management

d) Employer branding and candidate attraction

e) Selection and onboarding processes

f) Other (please specify)

Part 4: Measurable Impact on Workers

1) Are you currently working in an industry with an HR department?

a) Yes

b) No

2) How important do you think competencies are for workers in industries with HR departments?

a) Least important

b) Somewhat important

c) Moderately important

d) Very important

3) Do you believe that competencies have a measurable impact on employee performance and productivity?

a) Strongly disagree

b) Disagree

c) Agree

d) Strongly agree

4) In your opinion, which factors contribute to the differences in measurable impact between industries with HR departments and those without? (Select all that apply)

a) Availability of HR expertise

b) Access to employee development programs

c) Clear performance evaluation systems

d) Structured career progression paths

e) Other (please specify)

5) How satisfied are you with the current competency framework development practices in your organization?

a) Very dissatisfied

b) Somewhat dissatisfied

c) Neither satisfied nor dissatisfied

d) Somewhat satisfied

e) Very satisfied

6) Please rate the importance of the following competencies for effective HR management in small-scale industry (Scale: 1 = Not Important, 5 = Extremely Important):

a) Recruitment and Selection

b) Employee Onboarding

c) Performance Management

d) Compensation and Benefits

e) Employee Relations

f) Training and Development

g) HR Compliance and Legal Knowledge

h) Data Analytics and HR Metrics

i) Other (Please specify)

Skill Assessment

1) How would you rate your proficiency in the following skills? (Scale: 1 = Novice, 5 = Expert)

a) Communication Skills

b) Conflict Resolution

c) Problem-Solving

d) Time Management

e) Organizational Skills

f) Attention to Detail

Challenges and Opportunities

1) What do you consider the biggest HR challenge in small-scale industry?

a) Limited Resources

b) Lack of Specialized HR Personnel

c) Keeping up with Changing Regulations

d) Employee Retention

e) Other (Specify)

Training and Development need

1) Which areas would you be interested in receiving additional training or development?

a) HR Strategy and Planning

b) Employment Law and Regulations

c) Employee Engagement

d) HR Technology

e) Diversity and Inclusion

f) Other (Specify)

2) How do you prefer to receive training and development? (Select all that apply)

a) In-Person Workshops

b) Online Courses

c) Webinars

d) On-the-Job Training

e) Other (Specify)

Part 5: Competencies and Behavior Traits

1) In your opinion, which HR competencies have the most significant impact on employee performance and productivity in small-sized industries? (Select all that apply)

a) Effective performance evaluation and feedback

b) Competency-based career development

c) Employee engagement and motivation

d) Change management and organizational development

e) HR metrics and analytics

f) Other (please specify)

2) How important do you think HR competency development is for enhancing employee job satisfaction and retention in small-sized industries?

a) Not important at all

b) Slightly important

c) Moderately important

d) Extremely important

3) Please rate the extent to which you agree with the following statements:

(Use scale from 1 to 5, where 1 = Strongly Disagree and 5 = strongly agree)

I am confident in my ability to effectively manage HR processes (for HR roles) / contribute to the success of the organization (for non-HR roles).

a) I am skilled in identifying and recruiting suitable candidates.

b) I have experience in conducting effective employee onboarding.

c) I am capable of managing performance and providing constructive feedback.

d) I understand the principles of compensation and benefits management.

e) I am skilled in resolving employee relations issues.

f) I value continuous learning and professional development.

g) I can adapt to changing HR regulations and compliance requirements.

4) Please rate the extent to which you agree with the following statements:

(Use scale from 1 to 5, where 1 = Strongly Disagree and 5 = Strongly agree)

a) I am approachable and able to communicate effectively with colleagues.

b) I handle conflicts and challenges with professionalism.

c) I am open to new ideas and feedback.

d) I take initiative in problem-solving and decision-making.

e) I prioritize teamwork and collaboration.

f) I exhibit a high degree of attention to detail.

g) I am adaptable to change and willing to learn from failures.

5) What additional competencies do you consider essential for effective HR management or contributing to the success of the organization in small-scale industries? (Select all that apply)

a) Recruitment and Selection

b) Employee Onboarding

c) Performance Management

d) Compensation and Benefits

e) Employee Relations

f) Training and Development

g) HR Compliance and Legal Knowledge

h) Data Analytics and HR Metrics

i) Other (Please specify)

6) Can you identify specific behaviors critical for success in HR roles or non-HR roles? (Select all that apply)

a) Approachability and Effective Communication

b) Conflict Resolution

c) Initiative and Problem Solving

d) Teamwork and Collaboration

e) Adaptability to Change

f) Attention to Details

g) Other (Please specify)

Part 6: AI IMPLEMENTATION & COMPETENCIES

1) Are you aware of any AI-based tools or technologies that can assist in evaluating the suitability and adaptability of personnel?

a) Yes

b) No

c) Other …….specify (if any)

2) How effective do you think Competency Framework Development with the help of AI can be in improving employee performance in small-sized industries?

a) Ineffective

b) Somewhat effective

c) Moderately effective

d) Highly effective

3) In your opinion, what are the key benefits of using Competency Framework Development with AI to evaluate personnel suitability and adaptability? (Select all that apply)

a) Improved job performance

b) Increased employee engagement

c) Enhanced decision-making

d) Better talent retention

e) Other (please specify)

4) How confident are you in the ability of Competency Framework Development with AI to identify skill gaps and training needs in small-sized industries?

a) Not confident at all

b) Slightly confident

c) Moderately confident

d) Highly confident

5) How do you believe the integration of AI will impact the required competencies for HR professionals or employees in small-scale industries?

a) Will require new competencies

b) Will enhance existing competencies

c) Will not significantly affect competencies

6) Which competencies do you think will become more important due to AI adoption? (Select all that apply)

a) Data Analysis and interpretation

b) Strategic Decision- Making

c) Technology Adaptation

d) Creativity and innovation

e) Other (Please specify)

7) What challenges do you anticipate in integrating AI-related competencies into the competency model development process? (Select all that apply)

a) Lack of awareness of AI

b) Difficulty in Assessing AI Skills

c) Resistance to AI Adoption

d) Resource Constraints

e) Other (Please specify)

8) How familiar are you with the concept of Artificial Intelligence (AI) and its potential applications in your industry?

a) Not Familiar

b) Somewhat Familiar

c) Moderately Familiar

d) Very Familiar

9) To what extent do you believe AI will impact HR processes and tasks in your organization?

a) Negligible Impact

b) Minor Impact

c) Moderate Impact

d) Significant Impact

10) Please rate your level of confidence in adapting to and utilizing AI tools and technologies:

a) Not Confident

b) Somewhat Confident

c) Moderately Confident

d) Very Confident

11) How well do you think your current knowledge and skills align with the requirements for effectively using AI in your role?

a) Poor Alignment

b) Somewhat Aligned

c) Moderately Aligned

d) Strongly Aligned

REFERENCES

Abbas, Y. *et al.* (2023) 'Ready, trainer … one*! discovering the entanglement of adaptive learning with virtual reality in industrial training: a case study', *Interactive Learning Environments*, 31(6), pp. 3698–3727. Available at: https://doi.org/10.1080/10494820.2021.1940215.

Agarwal, A. and Raghav, D. (2024) 'Modelling Key Drivers of Employee Behaviour for Personal and Professional Excellence', *Psychology Research and Behavior Management*, Volume 17, pp. 2179–2194. Available at: https://doi.org/10.2147/PRBM.S448469.

Ajzen, I. (1991) 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes*, 50(2), pp. 179–211. Available at: https://doi.org/10.1016/0749-5978(91)90020-T.

Albanese, R. (1989) 'Competency-based Management Education', *Journal of Management Development*, 8(2), pp. 66–76. Available at: https://doi.org/doi.org/10.1108/EUM0000000001343.

Altinay, L., Altinay, E. and Gannon, J. (2008) 'Exploring the relationship between the human resource management practices and growth in small service firms', *The Service Industries Journal*, 28(7), pp. 919–937. Available at: https://doi.org/10.1080/02642060701846804.

Anand, A. (2021) 'Implication of COVID-19 crisis for small scale industries on human resource management practices', *International Journal of Financial Management and Economics*, 4(2), pp. 106–113. Available at: https://doi.org/10.33545/26179210.2021.v4.i2.98.

Atkinson, C. *et al.* (2022) 'Small firms, owner managers and (strategic?) human resource management, 2021', *Human Resource Management Journal*, 32(2), pp. 449–469. Available at: https://doi.org/10.1111/1748-8583.12406.

B Bharathi, MK Saraswathy (2023) 'A-Study-On-E-Recruitment-Conceptual-Framework', VIII, No. 1(XVIII)(2022). Available at: https://www.researchgate.net/profile/Bharathi-Bapuji/publication/376595438_A_STUDY_ON_E-RECRUITMENT_-CONCEPTUAL_FRAMEWORK/links/657ef6038e2401526ddf250f/A-STUDY-ON-E-RECRUITMENT-CONCEPTUAL-FRAMEWORK.pdf?__cf_chl_tk=H2Rxe_VbZeJhnKPXKW.MubHcjhMivBmsBBYUK6Pg7CE-1734110883-1.0.1.1-ewVC_0ZGWYi9JDVB_xut24NG4u6jyO8x1OmIkF3sNvA.

Bakanova, A. and Shikov, A.N. (2020) 'The method of the best performer selection based on a competency-based approach', *SHS Web of Conferences*. Edited by I. Tkachenko, 89, p. 03004. Available at: https://doi.org/10.1051/shsconf/20208903004.

Boon, C. *et al.* (2011) 'The relationship between perceptions of HR practices and employee outcomes: examining the role of person–organisation and person–job fit', *The International Journal of Human Resource Management*, 22(1), pp. 138–162. Available at: https://doi.org/10.1080/09585192.2011.538978.

Boyatzis, R.E. (2008) 'Competencies in the 21st century', *Journal of Management Development*. Edited by R. Boyatzis, 27(1), pp. 5–12. Available at: https://doi.org/10.1108/02621710810840730.

Campion, M.A. *et al.* (2011) 'Doing competencies well: Best practices in competency modeling', *Personnel Psychology*, 64(1), pp. 225–262. Available at: https://doi.org/10.1111/j.1744-6570.2010.01207.x.

Cao, C. and Zhang, Z. (2022) 'Machine Learning-Assisted Competency Modeling for Human Resource Management Jobs', *Mobile Information Systems*. Edited by R. Mo, 2022, pp. 1–15. Available at: https://doi.org/10.1155/2022/8380307.

Cardy, R.L. and Selvarajan, T.T. (2006) 'Competencies: Alternative frameworks for competitive advantage', *Business Horizons*, 49(3), pp. 235–245. Available at: https://doi.org/10.1016/j.bushor.2005.09.004.

Chaston, I. *et al.* (2001) 'Organisational learning style, competencies and learning systems in small, UK manufacturing firms', *International Journal of Operations & Production Management*, 21(11), pp. 1417–1432. Available at: https://doi.org/10.1108/EUM0000000006224.

Chouhan, V.S. and Srivastava, S. (2014) 'Understanding Competencies and Competency Modeling — A Literature Survey', *IOSR Journal of Business and Management*, 16(1), pp. 14–22. Available at: https://doi.org/10.9790/487X-16111422.

Darien, S. (2017) 'SHRM competency model'. Available at: https://medium.com/@StevenDarien/the-nine-competencies-of-the-shrm-competency-model-78622a70def6#:~:text=Steven%20Darien%20also%20belongs%20to,1.

davis, F. (1987) *Technology acceptance model: TAM*. University of Michigan. Available at: https://quod.lib.umich.edu/b/busadwp/images/b/1/4/b1409190.0001.001.pdf.

Dima, J. *et al.* (2024) 'The effects of artificial intelligence on human resource activities and the roles of the human resource triad: opportunities and challenges',

Frontiers in Psychology, 15, p. 1360401. Available at: https://doi.org/10.3389/fpsyg.2024.1360401.

Dixit, pooja (2024) 'EP Journal on Digital Signal Processing', *ENRICHED PUBLICATIONS PVT. LTD*, Volume No. 8(Issue No. 1), p. 46.

Dreković, E., Radosavljević, M. and Teofilović, Ž. (2023) 'HR Practices Through the Lens of Technology and Digital Transformation', *Economic Themes*, 61(4), pp. 541–565. Available at: https://doi.org/10.2478/ethemes-2023-0028.

Flick, U. (2015) '*Qualitative Inquiry* —2.0 at 20? Developments, Trends, and Challenges for the Politics of Research', *Qualitative Inquiry*, 21(7), pp. 599–608. Available at: https://doi.org/10.1177/1077800415583296.

Guthrie, J. (2001) 'The management, measurement and the reporting of intellectual capital', *Journal of Intellectual Capital*, 2(1), pp. 27–41. Available at: https://doi.org/10.1108/14691930110380473.

Hogg, B.A. (1993) 'EUROPEAN MANAGERIAL COMPETENCES', *European Business Review*, 93(2). Available at: https://doi.org/10.1108/EUM0000000001914.

Hossler, C. and James, A. (2021) 'Competency-based nursing: Reducing cost while maintaining or improving quality', *The Journal of Competency-Based Education*, 6(2), p. e1247. Available at: https://doi.org/10.1002/cbe2.1247.

Hu, Q. (2023) 'Unilever's Practice on AI-based Recruitment', *Highlights in Business, Economics and Management*, 16, pp. 256–263. Available at: https://doi.org/10.54097/hbem.v16i.10565.

Ibrahim, Z., Abdullah, F. and Ismail, A. (2016) 'International Business Competence and Small and Medium Enterprises', *Procedia - Social and Behavioral Sciences*, 224, pp. 393–400. Available at: https://doi.org/10.1016/j.sbspro.2016.05.402.

Kadirov, A. *et al.* (2024) 'AI in Human Resource Management: Reimagining Talent Acquisition, Development, and Retention', in *2024 International Conference on Knowledge Engineering and Communication Systems (ICKECS). 2024 International Conference on Knowledge Engineering and Communication Systems (ICKECS)*, Chikkaballapur, India: IEEE, pp. 1–8. Available at: https://doi.org/10.1109/ICKECS61492.2024.10617231.

Kerr, M.R. (1995) 'Tacit knowledge as a predictor of managerial success: A field study.', *Canadian Journal of Behavioural Science / Revue canadienne des sciences du comportement*, 27(1), pp. 36–51. Available at: https://doi.org/10.1037/0008-400X.27.1.36.

Kieran, sarah (2019) ‘Six HR competency future model by Ulrich dave’, *sciendo*, 37(1), pp. 31–34. Available at: https://doi.org/doi.10.2478/ijm-2018-0003.

Kosasih, K. (2024) ‘The Role of Human Resource Management in Sustainable Development: A Systematic Literature Review’, *Economics Studies and Banking Journal (DEMAND)*, 1(2), pp. 61–74. Available at: https://doi.org/10.62207/q4jya069.

Kotey, B. (2005) ‘Goals, management practices, and performance of family SMEs’, *International Journal of Entrepreneurial Behavior & Research*, 11(1), pp. 3–24. Available at: https://doi.org/10.1108/13552550510580816.

Lam, T., Baum, T. and Pine, R. (2003) ‘Subjective norms Effects on Job Satisfaction’, *Annals of Tourism Research*, 30(1), pp. 160–177. Available at: https://doi.org/10.1016/S0160-7383(02)00047-6.

Lucia, A.D. and Lepsinger, R. (1999) *The art and science of competency models: pinpointing critical success factors in organizations*. San Francisco, Calif: Jossey-Bass/Pfeiffer. Available at: https://www.wiley.com/en-ae/The+Art+and+Science+of+Competency+Models%3A+Pinpointing+Critical+Success+Factors+in+Organizations-p-9780787946029.

LUCIA A-LEPSINGER, R. (1999) *The Art and Science of Competency Models: Pinpointing Critical Success Factors in Organizations*. Wiley Publishing: New Yersey.

Lynham, S.A. and Cunningham, P.W. (2006) ‘National Human Resource Development in Transitioning Societies in the Developing World: Concept and Challenges’, *Advances in Developing Human Resources*, 8(1), pp. 116–135. Available at: https://doi.org/10.1177/1523422305283150.

MacMahon, J. and Murphy, E. (1999) ‘Managerial effectiveness in small enterprises: implications for HRD’, *Journal of European Industrial Training*, 23(1), pp. 25–35. Available at: https://doi.org/10.1108/03090599910253519.

Madhavkumar, V. (2023) ‘Human Resource Management Practices as Determinants of Organizational Performance’, *Productivity*, 63(4), pp. 465–477. Available at: https://doi.org/10.32381/PROD.2023.63.04.9.

Marler, J.H. and Boudreau, J.W. (2017) ‘An evidence-based review of HR Analytics’, *The International Journal of Human Resource Management*, 28(1), pp. 3–26. Available at: https://doi.org/10.1080/09585192.2016.1244699.

McClelland, D.C. (1973) ‘Testing for competence rather than for “intelligence.”’, *American Psychologist*, 28(1), pp. 1–14. Available at: https://doi.org/10.1037/h0034092.

Mccormick, D. (1999) ‘African Enterprise Clusters and Industrialization: Theory and Reality’, *World Development*, 27(9), pp. 1531–1551. Available at: https://doi.org/10.1016/S0305-750X(99)00074-1.

Megahed, N. (2018) ‘A Critical Review of the Literature and Practice of Competency Modelling’, *KnE Social Sciences*, 3(10), p. 104. Available at: https://doi.org/10.18502/kss.v3i10.3106.

Meginley, dave (2022) ‘HRCI 9 competency model for HR excellence’, *9 Competencies for HR Excellence*. Available at: https://www.hrci.org/community/blogs-and-announcements/hr-leads-business-blog/hr-leads-business/2022/02/14/nine-competencies-for-hr-excellence-emerge.

Midhat Ali, M. *et al.* (2021) ‘Competency framework development for effective human resource management’, *Sage Open*, 11(2), p. 21582440211006124.

Midhat Ali, M. and Mohsin Qureshi, S. (2021) ‘Competency framework validation: application in textile industry’, *Industria Textila*, 72(05), pp. 509–514. Available at: https://doi.org/10.35530/IT.072.05.1810.

Nairn, A. and Piatti-Farnell, L. (2024) ‘The Artificial’, *M/C Journal*, 27(6). Available at: https://doi.org/10.5204/mcj.3141.

Nguyen, C. (2024) ‘Adapting Organizational Inclusivity Through Empowering Gender-Diversity’, *International Conference on Gender Research*, 7(1), pp. 262–269. Available at: https://doi.org/10.34190/icgr.7.1.2102.

Nnamdi UGO Joseph (2023) ‘Managing a Diverse Workforce: Strategies for Effective Staffing and Inclusion’. Unpublished. Available at: https://doi.org/10.13140/RG.2.2.22279.16809.

Noe, R.A. john hollenbeck (ed.) (2014) *Fundamentals of human resource management*. 5th ed. New York, NY: McGraw-Hill/Irwin.

Patrick, H.A. and Kumar, V.R. (2012) ‘Managing Workplace Diversity: Issues and Challenges’, *Sage Open*, 2(2), p. 2158244012444615. Available at: https://doi.org/10.1177/2158244012444615.

Pickett, L. (1998) ‘Competencies and Managerial Effectiveness: Putting Competencies to Work’, *Public Personnel Management*, 27(1), pp. 103–115. Available at: https://doi.org/10.1177/009102609802700110.

Priyanka, R. *et al.* (2022) ‘Challenges to Human Resource Practices in Startup Companies: Implications for Economic and Social Sustainability at the Workplace’, *SSRN Electronic Journal* [Preprint]. Available at: https://doi.org/10.2139/ssrn.4186769.

Rankin, N. (2002) ‘Raising performance through people: the ninth competency survey’, *Competency and Emotional Intelligence*, 3, pp. 2–21.

Rao, M.K. (2009) *Identification of Managerial Competencies for Identification of Managerial Competencies for Establishing a Conceptual F ptual Framework for HRD Practioners*. Available at: https://sci-hub.se/https://doi.org/10.1177/097324700900500405.

Saira, K., Zariyawati, M.A. and Annuar, M.N. (2010) 'Information System and Firms' Performance: The Case of Malaysian Small Medium Enterprises', *International Business Research*, 3(4), p. p28. Available at: https://doi.org/10.5539/ibr.v3n4p28.

Salman, M., Ganie, S.A. and Saleem, I. (2020) 'The concept of competence: a thematic review and discussion', *European Journal of Training and Development*, 44(6/7), pp. 717–742. Available at: https://doi.org/10.1108/EJTD-10-2019-0171.

Shet, S.V., Patil, S.V. and Chandawarkar, M.R. (2019) 'Competency based superior performance and organizational effectiveness', *International Journal of Productivity and Performance Management*, 68(4), pp. 753–773. Available at: https://doi.org/10.1108/IJPPM-03-2018-0128.

Shippmann, J.S. *et al.* (2000) 'THE PRACTICE OF COMPETENCY MODELING', *Personnel Psychology*, 53(3), pp. 703–740. Available at: https://doi.org/10.1111/j.1744-6570.2000.tb00220.x.

Siradhana, N.K. and Arora, Dr.R.G. (2023) 'The AI renaissance in HR: Exploring modern solutions', *International Journal of Research in Human Resource Management*, 5(2), pp. 149–152. Available at: https://doi.org/10.33545/26633213.2023.v5.i2b.163.

Skorková, Z. (2016) 'Competency Models in Public Sector', *Procedia - Social and Behavioral Sciences*, 230, pp. 226–234. Available at: https://doi.org/10.1016/j.sbspro.2016.09.029.

Tambe, P., Cappelli, P. and Yakubovich, V. (2019) 'Artificial Intelligence in Human Resources Management: Challenges and a Path Forward', *California Management Review*, 61(4), pp. 15–42. Available at: https://doi.org/10.1177/0008125619867910.

Taşkin, H., Adali, M.R. and Ersin, E. (2004) 'Technological intelligence and competitive strategies: An application study with fuzzy logic', *Journal of Intelligent Manufacturing*, 15(4), pp. 417–429. Available at: https://doi.org/10.1023/B:JIMS.0000034104.38632.1c.

Tjahjadi, B. *et al.* (2022) 'Human capital readiness and global market orientation in Indonesian Micro-, Small- and-Medium-sized Enterprises business performance', *International Journal of Productivity and Performance Management*, 71(1), pp. 79–99. Available at: https://doi.org/10.1108/IJPPM-04-2020-0181.

Toyon, M.A.S. (2021) 'Explanatory sequential design of mixed methods research: Phases and challenges', *International Journal of Research in Business and Social Science (2147- 4478)*, 10(5), pp. 253–260. Available at: https://doi.org/10.20525/ijrbs.v10i5.1262.

Tramontano, C., Grant, C. and Clarke, C. (2021) 'Development and validation of the e-Work Self-Efficacy Scale to assess digital competencies in remote working', *Computers in Human Behavior Reports*, 4, p. 100129. Available at: https://doi.org/10.1016/j.chbr.2021.100129.

Trichet, F. and Leclère, M. (2003) 'A Framework for Building Competency-Based Systems Dedicated to Human Resource Management', in N. Zhong et al. (eds) *Foundations of Intelligent Systems*. Berlin, Heidelberg: Springer Berlin Heidelberg (Lecture Notes in Computer Science), pp. 633–639. Available at: https://doi.org/10.1007/978-3-540-39592-8_91.

Tzafrir, S.S. (2006) 'A universalistic perspective for explaining the relationship between HRM practices and firm performance at different points in time', *Journal of Managerial Psychology*, 21(2), pp. 109–130. Available at: https://doi.org/10.1108/02683940610650730.

Ulrich, D. *et al.* (1995) 'Human resource competencies: An empirical assessment', *Human resource management*, 34(4), pp. 473–495.

Ulrich, D. (2008) *The Journey of HR*. Available at: https://hrtransformationbook.s3.amazonaws.com/Documents/6.2%20HRCS%20Round%205%20Exec%20Summary.pdf.

Ulrich, D. *et al.* (2010) 'HR Competencies: Mastery at the Intersection of People and Business', *NHRD Network Journal*, 3(4), pp. 103–104. Available at: https://doi.org/10.1177/0974173920100422.

Varadaraj, Dr.A. and Al Wadi, Dr.B.M. (2021) 'A Study on Contribution of Digital Human Resource Management towards Organizational Performance', *THE INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE AND BUSINESS ADMINISTRATION*, 7(5), pp. 43–51. Available at: https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.75.1004.

Waligóra, Ł. (2024) 'Exploring the Impact of Age Diversity on Organizational Identification: A Study of HR Practices and Perceived Age Discrimination Climate', *Administrative Sciences*, 14(10), p. 243. Available at: https://doi.org/10.3390/admsci14100243.

White, R.W. (1959) 'Motivation reconsidered: The concept of competence.', *Psychological Review*, 66(5), pp. 297–333. Available at: https://doi.org/10.1037/h0040934.

Wickramasinghe, A., Gamage, H.R. and Chakraborty, A. (2013) ‘Inquisitiveness in Organisational Life: Finding Things in Unusual Places’, in P. Mandal (ed.) *Proceedings of the International Conference on Managing the Asian Century*. Singapore: Springer Singapore, pp. 405–411. Available at: https://doi.org/10.1007/978-981-4560-61-0_45.

Zacca, R. and Dayan, M. (2018) ‘Linking managerial competence to small enterprise performance within the dynamic capability logic’, *Journal of Small Business and Enterprise Development*, 25(2), pp. 256–276. Available at: https://doi.org/10.1108/JSBED-02-2017-0042.