

# **Upskilling as a prerequisite in the technology-driven world**

*A dissertation submitted to the University of Kerala in partial fulfilment of the requirements for the Master of Arts  
in Human Resource Management Degree Examination*

**Submitted by**

**ABEERAJ K A**

**Exam Code: 58418404**

**Candidate Code: 58421115001**

**Subject Code: HRM 2.4.5**

**Under the supervision of DR. ANGELO MATHEW PANATHAPURAM**

**(Assistant Professor, Department of Personnel Management)**



**DEPARTMENT OF PERSONNEL MANAGEMENT**

**LOYOLA COLLEGE OF SOCIAL SCIENCES**

**THIRUVANANTHAPURAM**

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CERTIFICATION OF APPROVAL

This is to certify that this dissertation entitled “UPSKILLING AS A PREREQUISITE IN A TECHNOLOGY-DRIVEN WORLD” is a record of genuine work done by ABEERAJ K A, a fourth semester Master of Arts in Human Resource Management Student of this college under my supervision and guidance and that it is hereby approved for submission.

16/08/2023

Thiruvananthapuram

**Dr Angelo Mathew**

Research Guide

Department of Personnel

Management

Loyola College of Social Sciences

Sreekariyam, Thiruvananthapuram

Recommended for forwarding to the University of Kerala,

**Dr. Anitha S**

Head, Department of  
Personnel

Management

Loyola College of Social Sciences

Sreekariyam, Thiruvananthapuram

Recommended for forwarding to the University of Kerala,

**Dr. Saji P. Jacob**

Principal

Loyola College of Social Sciences,

Sreekariyam, Thiruvananthapuram

ABEERAJ K A

## **DECLARATION**

I, **ABEERAJ K A**, do hereby declare that this Dissertation titled “**UPSKILLING AS A PREREQUISITE IN A TECHNOLOGY-DRIVEN WORLD**” is based on the original work carried out by me and submitted to the University of Kerala during the year 2021-2023 towards partial fulfilment of the requirements for the **Master of Arts in Human Resource Management** Degree Examination. I further declare that this dissertation is based on the original study undertaken by me and has not been submitted for the award of any diploma or degree from any other University/ Institution.

Candidate Name: Abeeraj K A

Place: Thiruvananthapuram

Date: 16-08-2023

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# Abstract

The rapid advancement of technology is transforming workplaces, necessitating adaptation by both organizations and employees. This quantitative study examined inclusionary practices, upskilling demand, and technology prominence across 80 HR professionals in IT, manufacturing, and service sectors. A questionnaire was utilized to gather data on variables including job displacement views, upskilling perspectives, and workplace culture changes. SPSS enabled statistical analysis using descriptive and inferential methods like frequency distributions, chi-square tests of association, and mean score comparisons.

The foremost aim of the study was to understand whether HR professionals see the rapid advent of tech in their field of work as a threat or opportunity. It was found that people are aware of the danger of not being updated with respect to their skills and knowledge in their work. They also find the employer's commitment towards reducing this fear of job loss is not sufficient. It has been found that employees are much more confident and optimistic when they are provided with proper skill development in tandem with changes in technology.

The key objectives were to assess organizational inclusion amid technology changes, examine employee upskilling demand and perceptions, and evaluate the prominence and impact of new workplace technologies. Findings revealed technology is highly prominent while inclusionary practices and upskilling lag behind. Employees recognize upskilling benefits but face implementation challenges.

Targeted recommendations include automatable job role upskilling, change management competencies, and enhanced employer commitment to continuous training and development. The research emphasizes technology integration should occur alongside empowering employees through upskilling and capability building. This study provides insights into fostering adaptable workforces and smooth technology adoption through human-centric approaches.

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## **List of Abbreviations**

- 1. HRM - Human Resource Management**
- 2. IT - Information Technology**
- 3. AI - Artificial Intelligence**
- 4. IoT - Internet of Things**
- 5. ERP - Enterprise Resource Planning**
- 6. BPM - Business Process Management**
- 7. I4.0 - Fourth Industrial Revolution**
- 8. MNC - Multinational Corporation**
- 9. e-HRM - Electronic Human Resource Management**
- 10. HRIS - Human Resource Information System**
- 11. HRMI - HRM Innovation**
- 12. TQM - Total Quality Management**
- 13. KPI - Key Performance Indicator**
- 14. ICoED - Industrial Collaborative Educational Design**
- 15. PDCA - Plan, Do, Check, Act**
- 16. SPSS - Statistical Package for the Social Sciences**
- 17. PG - Post Graduate**
- 18. MA - Master of Arts**

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**CHAPTER 1**  
**INTRODUCTION**

## **1.1 INTRODUCTION**

In today's metaverse enabled world of work, organizations are grappling with the challenge of preparing their workforce by identifying them as talents to excel. In an increasingly technology-driven environment, automation, artificial intelligence, digital transformation have significantly reshaped industries and job roles, necessitating a shift in the skills required for success. As a result, the concept of upskilling has gained prominence as a means to equip employees with the necessary competencies to navigate these technological changes and ensure a sustainable workforce. This study is envisioned based on the hunch: employees have different perspectives such as: digitalisation may cause job loss in the HR domain, upskilling is the panacea, AI may reduce use of human capital drastically, do organisations accommodate employees reluctant to upskill?, Can there be sustenance initiatives from the organisations to help employees adopt to changing technologies?, functional entry level HR jobs may be replaced by machines and advancement of technology may further the insecurity of human capital at work. This inquiry is therefore an attempt to verify if employees can sustain in their present occasion with adequate upskilling so that HR career can prolong.

This dissertation aims to investigate the practices organizations adopt to include their employees in technology advancements, the demand for upskilling, and the prevalence of new technology in the workplace, from the perspective of HR professionals. By exploring these areas, the study seeks to uncover the secrets to building a resilient workforce capable of embracing technological changes.

To address the research problem, the study will delve into the key factors that determine employees' upskilling needs in a technology-driven work environment. It will examine how organizations can effectively identify and address these needs to ensure the workforce remains well-equipped. Additionally, the study will explore the extent to which employees' concerns about job loss due to automation and technological advancements impact their willingness to participate in upskilling programs. The strategies employed to alleviate these fears and foster a culture of continuous learning and development will also be examined.

Upskilling refers to the process of acquiring new knowledge, skills, and competencies to enhance one's abilities and stay relevant in a rapidly changing work environment. It involves developing and expanding upon existing skills or acquiring new skills that are in demand due to technological advancements, industry shifts, or evolving job requirements.

Upskilling is essential in a technology-driven world where automation, digitalization, and artificial intelligence are reshaping industries and transforming job roles. It helps individuals adapt to new technologies, perform tasks more efficiently, and meet the evolving needs of employers and customers.

Upskilling can take various forms, such as attending training programs, participating in workshops or webinars, pursuing certifications or advanced degrees, engaging in self-directed learning, or seeking mentorship or coaching. It may involve developing technical skills, such as coding, data analysis, or digital marketing, as well as soft skills like critical thinking, communication, and adaptability.

The goal of upskilling is to ensure individuals have the necessary skills and knowledge to thrive in their current roles, pursue new career opportunities, or even transition to entirely new fields. By continuously investing in upskilling, individuals can enhance their employability, contribute more effectively to their organizations, and navigate the challenges posed by technological advancements and changing job market dynamics.

Organizations also recognize the importance of upskilling their workforce as it enables them to adapt to technological changes, drive innovation, and remain competitive. Upskilling initiatives implemented by companies may include providing training opportunities, creating learning and development programs, fostering a culture of continuous learning, and supporting employees in acquiring new skills that align with organizational goals and industry trends.

Sustainability in the workforce refers to the ability of individuals, organizations, and the broader economy to maintain a balance between social, environmental, and economic factors to ensure long-term well-being and success. It involves creating and maintaining a work environment that promotes the well-being of employees, supports their professional growth, and fosters a culture of continuous learning and development.

Sustainable workforce practices contribute to employee retention, engagement, and productivity, while also enhancing organizational reputation, attracting top talent, and building long-term success. It recognizes that employees are valuable assets and prioritizes their well-being, growth, and development within the context of broader sustainability goals.

The research will draw upon existing literature to review the influence of technology on HR practices, the importance of upskilling in the digital age, and the role of inclusive policies in fostering employee satisfaction and productivity. Additionally, it will consider studies that explore the impact of digital transformation on job security and the implications for employee inclusivity. Demographic variables such as age, gender, education, location, and experience will be taken into account to understand the diverse perspectives and challenges faced by employees.

## **1.2 STATEMENT OF THE PROBLEM**

There is exponential growth in technology, which actually diminishes the possibility of human beings or HR professionals getting continued in their present occasion, which is a reality in the context of metaverse. Organisations where metaverse is not predominant, there is severe automation. And apart from this, many other organisations, they are part of the Internet of things (IoT).

Increasingly the technology is getting advanced, miniscule and minor functional HR jobs that are similar to clerical jobs in nature are getting eliminated. This is a fear.

At the same time there are people who also think that technology is to their advantage i.e., it is seen as an opportunity. Researcher here interacted with experts and found that there is some need to explore these present understanding of technology and human interface in a scientific way. So the study here tries to scientifically inquire whether this technology advancement happening in the industry is perceived by majority of HR professionals, as a 'Boon or Bane'.

To study this, three important things are taken.

1. Perception of professionals about technology of the present which has dimensions such as metaverse.
2. If technology is seen as an opportunity, will that be possible with human beings by upskilling to cope up with the demands of technology?
3. Is this a real threat, where organisations are proactively taking any measures to help employees adopt to the changing scenario, which is attributed by the researcher as an attempt from the organisation to sustain the employee in the broader umbrella of 'sustainability'?



## **1.3 OBJECTIVES**

### **General Objective**

- To examine technology advancement and perception of HR professionals.

### **Specific Objective**

- To inquire on the inclusionary practices of organisations in the context of technology advancement.
- To study the demand for upskilling and perception of employees in order to adapt and sustain on the job.
- To study the prominence of new technology at work and perspective of HR employees.

## **1.4 DEFINITION OF CONCEPTS**

### **Upskilling**

#### Theoretical Definitions-

Upskilling is the process of acquiring new knowledge, skills, and competencies to enhance individual and collective abilities to adapt and perform effectively in a rapidly changing and complex work environment. (Source: The Upskilling Imperative by **Josh Bersin, 2019**)

#### Operational Definitions-

Upskilling may include attending workshops, seminars, conferences, or training sessions specifically designed to enhance technical proficiency, digital literacy, and adaptability to technological advancements in their respective sectors. Additionally, any self-directed learning initiatives, such as online courses, certifications, or self-study materials, that aim to develop new skills and stay updated with industry trends and practices are considered part of the upskilling process.

### **Inclusion**

#### Theoretical Definition-

"Inclusion is the deliberate and intentional process of creating a culture where all individuals, regardless of their diverse backgrounds or identities, feel valued, respected, and empowered to fully participate and contribute." **(Bell Hooks, 1990)**

**Operational Definition-**

The effort from the organisation side to include those who lack the skills and knowledge relevant to their work requirement. Inclusion may include providing training and development, seminars, webinars, e-learning through e-learning platforms.

## **Sustainability**

Theoretical Definition-

"Sustainability refers to the concept of meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. It encompasses the responsible and balanced use of resources, social equity, and environmental stewardship."  
**(Brundtland Commission, 1987)**

Operational Definition

The ability of individuals to adapt and move on regardless of the change happening to their job environment.

## **Technology**

Theoretical Definition

Technology means the systematic application of scientific or other organized knowledge to practical tasks. (John Kenneth Galbraith, 1967).

Operational Definition

It is the application of software which increase productivity and reduces the time human resource spent on doing their job.

## **Automation**

### Theoretical Definition

It is the use of technological-based systems that replace routine physical labor and human reasoning by machines that perform operations with minimal or no human intervention. (Alexander Mircescu)

### Operational Definition

It is implementation and utilization of technology and mechanized systems to perform tasks and processes with minimal human intervention. It involves the use of machines, computer software, control systems, and robotics to automate repetitive, rule-based, or routine activities.

## **1.5 SIGNIFICANCE OF THE STUDY**

The study will provide concrete solutions for their problems, assuming that they have their employees with apprehensions that the technology is fast changing. So if they don't upskill, they may lose their jobs. And will there be any opportunity given by the company to upskill? Or will they may have to bear the cost of upskilling? This study will inquire into such concerns, which generally prevail among their employees.

The study will also give an insight to the practising HR managers as they are supposed to manage and work in that profile for some more time. And they have to train the younger generation of budding HR managers when they come as trainees. So if they are not sure of the future of HR in the context of changing technology that can be also challenging. Thus this study may help them. The outcome of the study may, tell this HR fraternity that these are the challenges in a more scientific way which serve them as ready reckoners, so they don't have to rely on guess but on evidence based study.

The study will also have relevance for the academic community that they will get a new knowledge base, which can be used as base for further development.

It will help them develop technology appropriate to human existence. One cannot simply say that everything will be fine without people, like let us have more machines and how will people exist? That we have technology for everything.

All these technology is there to increase human productivity and make life in ease, not as replacements for human skill or talent.

The study holds significant importance for both organizations and individuals in the HR domain. It aims to address the concerns and worries that employees may have about the rapid changes in technology and how it could impact their jobs. The goal is to provide practical solutions to ensure job security and long-term career success.

For organizations, the findings will shed light on the importance of offering opportunities for employees to learn new skills and adapt to technological advancements. The study will explore whether companies are willing to invest in their workforce by providing training programs, or if employees are expected to pay for their own upskilling. Understanding these dynamics will help organizations make informed decisions and create strategies that promote continuous learning and development among their employees.

The study will also benefit HR managers who are currently working in the field and responsible for training the next generation of HR professionals. By providing insights into the future of HR careers in the face of technological changes, the study will equip HR managers with valuable knowledge to navigate challenges and guide their teams effectively.

Moreover, the study's findings will contribute to the academic community by adding to the existing knowledge base. Researchers and scholars in the field of HR and technology will have access to evidence-based insights that can serve as a foundation for further exploration and development.

Ultimately, this study will reinforce the idea that technology should be viewed as a tool to enhance human productivity and improve the quality of life, rather than a replacement for human skills and abilities. By understanding the challenges and opportunities brought about by technology-driven changes, organizations and individuals can harness technology's potential while preserving the value of human capabilities.

## **1.6 CHAPTERIZATION**

This dissertation is presented in five chapters as below

- Chapter 1- Introduction, Statement of the problem, Objectives, Definition of concepts, Significance of the study and chapterization.

- Chapter 2 –Review of literature, Theoretical framework of the study will be detailed in this chapter to find out research gap identified as conclusion.
- Chapter 3- Methodology includes Title of the study, Research Design, Research Variables, Universe and Sample of the study, Sampling Design, Unit of the study, Sources of Data, Tools of data collection, Pilot study, Scope of the study, Data collection, Tools for data analysis and Limitations of the study.
- Chapter 4- Data Analysis, discussion and interpretations will be summarised
- Chapter 5- will enlist findings, present suggestions and summarise conclusion of the study.

**CHAPTER 2**  
**REVIEW OF LITERATURE**

## **2.1 Review of literature**

### **2.1.1. Upskilling**

#### **International**

**Duane E. Leigh, Kirk D. Gifford (1999)** - The author have conducted a study titled on *Workplace Transformation and Worker Upskilling: The Perspective of Individual Workers*. This article focuses on the prevalence of workplace transformation in the American economy and its implications for workforce skill requirements and training investments. Unlike previous research that primarily relies on survey data from firms, this study takes a different approach by examining the perspectives of individual workers using data from the 1993 wave of the National Longitudinal Survey of Youth (NLSY).

The empirical findings reveal that workplace transformation is widespread. A significant 40 percent of private-sector workers surveyed reported experiencing a change at work within a year that necessitated learning new job skills. Additionally, around 23 percent of respondents indicated an organizational transformation in their workplace. The study also investigates the relationship between formal training and indicators of workplace transformation. It is observed that the incidence of formal training is positively associated with indicators of organizational transformation. However, the impact of these indicators is found to be influenced by other crucial factors such as the introduction of new products, new equipment, and new government regulations.

Interestingly, the research uncovers that government regulation has a surprisingly significant influence on formal training, surpassing the expected strong positive relationships with product development and physical capital investment. These findings shed light on the multifaceted nature of workplace transformations and highlight the importance of considering various factors when analyzing the relationship between training investments and organizational changes.

**PricewaterhouseCoopers (Firm), Manufacturing Institute (2016)** - The Corporate author have conducted a study titled on *Upskilling manufacturing: how technology is disrupting America's industrial labor force*. The main focus of this report is to address a fundamental question: How can US manufacturers cultivate a future talent pool that possesses the necessary skills to leverage the current technological advancements and, more importantly, to be well-

equipped for unforeseen technological developments that may arise in the future? To gain a deeper understanding of the talent landscape in US manufacturing, the authors conducted a survey involving 120 US manufacturers, with a particular emphasis on examining the impact of advanced manufacturing technologies on workforce dynamics. By analyzing the responses and insights gathered from these manufacturers, the report aims to provide valuable insights and recommendations on strategies that can be adopted to ensure a robust and skilled workforce in the ever-evolving manufacturing industry.

**Ma'arif, Muhamad Yusnorizam; Satar, Nurhizam Safie Mohd (2018)**- The author have conducted a study titled on *ERP Training Mechanism for Upskilling Users and Optimization of ERP System*. This article focuses on the implementation of an Enterprise Resource Planning (ERP) training model for ERP users in the Malaysian industry. The main objective is to establish a mandatory ERP training program that aligns with the company's Key Performance Indicators (KPIs). The study aims to enhance the existing ERP training model developed by previous researchers by incorporating enforcement elements. The researchers compiled the developed ERP training model based on available literature, considering that only a limited number of ERP training models are found in open literature.

The article compares different ERP training models, emphasizing the similarities identified, and proposes the integration of enforcement elements into the ERP training program. The ultimate goal is to ensure that ERP users acquire and maintain the necessary competence to contribute to the company's objective of cultivating competitive employees.

To analyze the ERP training requirements and ensure its alignment with the organization's KPIs, a preliminary survey was conducted using online questionnaires. The findings from this survey inform the development and enforcement of the training model. The article suggests that the implementation of the ERP training model should encompass all stages of the organization, with a particular emphasis on the finance, production, and logistics departments.

**Carla A. S. Gerales; Florbela P. Fernandes, et al.(2021)**- The author have conducted a study titled on *Co-Design Process for Upskilling the Workforce in the Factories of the Future*. The ongoing digital transformation in the world is significantly impacting professional occupations and job profiles in the context of future factories. As a result, there is a growing need to upskill and re-qualify the existing workforce. Recognizing this need, an approach called Industrial Collaborative Educational Design (ICoED) is introduced, which consists of three



stages and eight steps. This design approach emphasizes the democratic and collaborative participation of various stakeholders, including managers, educators, and learners. Each stakeholder contributes their unique perspectives to the training program's design process.

Within this co-design process, a critical task is the analysis of the skills gap, which plays a pivotal role in preparing the initial stage of the process. This involves identifying the specific requirements in terms of both soft and hard skills. The proposed ICoED process was implemented to address an upskilling challenge faced by an industrial metal stamping company. The participants engaged in three workshops to carry out the eight steps of the process, ultimately developing a comprehensive training program. The training program consisted of five modules, each carefully structured with relevant activities, resources, and infrastructure.

By adopting the ICoED approach, organizations can effectively address the upskilling needs of their workforce. The collaborative and inclusive nature of the design process ensures that multiple perspectives are considered, leading to a well-rounded and tailored training program. This approach enables organizations to bridge the skills gap and equip their employees with the necessary competencies to thrive in the evolving digital landscape of the future.

**Ling Li (2022)** - The author have conducted a study titled on *Reskilling and Upskilling the Future-ready Workforce for Industry 4.0 and Beyond*. The advent of Industry 4.0 is causing a revolution in manufacturing processes and significantly impacting globalization. This transformation is reshaping the workforce and expanding access to new skills and knowledge. According to the World Economic Forum, by the year 2025, approximately 50% of employees will require reskilling due to the adoption of new technologies. Furthermore, within the next five years, more than two-thirds of the skills currently considered important for job requirements will undergo substantial changes. Notably, a significant portion of the essential skills in 2025 will consist of technology competencies that are not yet regarded as crucial in today's job requirements.

This study focuses on the reskilling and upskilling of the future-ready workforce in the era of Industry 4.0 and beyond. The research examines the key skills sought by industries to effectively embrace Industry 4.0 and provides a blueprint that serves as a reference for individuals seeking to acquire new skills and knowledge. The findings highlight the importance of lifelong learning, which should be integrated into an organization's strategic goals. Both

individuals and companies must commit to reskilling and upskilling initiatives, making career development an integral part of the future workforce. To ensure success, it is crucial to make learning opportunities, such as reskilling and upskilling programs, easily accessible, available, and affordable for employees. This paper offers a distinctive perspective on the concept of a future-ready learning society, which is essential in the vision of Industry 4.0.

**Rhea Sawant and Bryan Thomas et al. (2022)** - The author have conducted a study titled on *Reskilling and Upskilling: To Stay Relevant in Today's Industry*. The rapidly advancing modernization and the introduction of new technologies and methodologies have significantly transformed the expectations of professional competence for employees in industries directly or indirectly affected by these changes. Consequently, there is an increasing demand for new jobs that require specialized skill sets. In order to remain relevant in the workforce, individuals must constantly refresh and expand their skill sets. Job seekers need to possess the right skills for specific positions, while existing employees must acquire new skills to adapt to emerging technologies and contribute to industry advancements.

Addressing this challenge and retaining the current workforce is of utmost importance. This is where reskilling and upskilling play crucial roles. These practices aim to equip employees with the necessary skills and knowledge to meet the evolving demands of the industry. By reskilling, individuals can acquire entirely new skill sets that align with emerging job requirements. Upskilling, on the other hand, allows individuals to enhance their existing skills to keep pace with technological advancements.

The objective of this paper is to raise awareness about the industrial trends observed in the current job market and the opportunities available for employers and employees (both potential and current) to foster a well-trained workforce. By embracing reskilling and upskilling, organizations can create an environment that benefits both individuals and the organization as a whole, contributing to continuous growth and development in the face of industrial advancements.

## **National**

**Sukarna Chakma, Nanvadee Chaijinda (2020)**-The author have conducted a study titled on *IMPORTANCE OF RESKILLING AND UPSKILLING THE WORKFORCE*. The primary objective of this paper is to highlight the importance of organizations providing suitable

opportunities for their workforce to acquire the necessary skills in the era of modern technology. By investing in reskilling and upskilling initiatives, organizations can reap significant benefits both for their employees and their businesses in the future. Compared to the costs associated with recruiting and training new employees, reskilling and upskilling present a more cost-effective option. By focusing on the development of their existing workforce, organizations can cultivate a highly skilled and knowledgeable workforce, thereby enhancing the capabilities of their employees. This approach not only leads to increased revenue for the organization but also improves employee retention.

For employees, it is crucial to ensure the relevance of their present skills, especially in a time where technology is continuously advancing and driving changes in the workplace. The ability to adapt to new technologies and acquire updated skills has become more significant than ever. By investing in reskilling and upskilling, employees can ensure that their skills remain relevant and in line with the evolving demands of the job market. This, in turn, enhances their employability and career prospects in a rapidly changing technological landscape.

**Akanksha Jaiswal, Joe Arun C et al. (2021)** - The author have conducted a study titled on *Rebooting employees: upskilling for artificial intelligence in multinational corporations*. Advocates of artificial intelligence (AI) have envisioned a future where intelligent machines take over routine tasks, allowing humans to focus on more creative endeavors. While concerns about job losses due to AI are widespread, organizational think tanks argue for the symbiotic collaboration between human and machine capabilities. Drawing on the dynamic skill theory, neo-human capital theory, and AI job replacement theories, we argue that the introduction and adoption of AI necessitate employees to enhance their skills through upskilling.

To identify the key skills considered essential for employee upskilling, we conducted interviews with 20 experienced professionals working in multinational corporations (MNCs) in the information technology sector in India. Using Gioia's qualitative analysis methodology, our investigation revealed five critical skills that require emphasis in employee upskilling: data analysis, digital proficiency, complex cognitive abilities, decision-making skills, and continuous learning aptitude.

These findings underscore the significance of acquiring and developing specific competencies to adapt to the changing landscape shaped by AI. Proficiency in data analysis is crucial for harnessing the potential of vast amounts of information generated in the AI era. Digital skills

are essential to navigate technological advancements and leverage digital tools effectively. Complex cognitive abilities, including critical thinking and problem-solving, enable employees to tackle intricate challenges posed by AI. Effective decision-making skills become paramount in the context of increased reliance on AI systems. Lastly, fostering a culture of continuous learning is vital for individuals to stay updated with the evolving AI technologies and adapt to new requirements.

By prioritizing the cultivation of these key skills, organizations can ensure their workforce remains equipped to thrive in the AI-driven environment, embracing the potential synergies between human expertise and machine intelligence.

**Angela Sutan, Radu Vranceanu (2021)** -The author have conducted a study titled on *Who should pay the bill for employee upskilling?* Upskilling plays a crucial role in enhancing an individual's capabilities to undertake new tasks or projects within their current job, thereby serving as an investment in their human capital. This process involves the employee dedicating significant effort and resources to acquire new skills and knowledge. When it comes to financing the upskilling initiatives, a firm-funded training program allows for screening potential participants, but it also comes with the drawback of hidden actions. Some employees may choose to self-train while continuing to work on low-value projects, leading to inefficiencies.

Alternatively, adopting a laissez-faire approach that relies on worker self-training and incentive-compatible contracts can attract more workers to high-value projects. However, to ensure flexibility and encourage self-training, the company must be willing to provide positive informational rent to these adaptable employees. When comparing the profits between the two approaches, a paradoxical situation emerges. It may actually be more advantageous for a company to rely on worker self-training rather than investing in a formal training program.

**Nausheen Nizami, Tulika Tripathi, et al. (2022)**-The author have conducted a study titled on *Transforming Skill Gap Crisis into Opportunity for Upskilling in India's IT-BPM Sector*. The Fourth Industrial Revolution (I4.0) is poised to revolutionize the way we operate in the 21st century. Despite being an invention of humans, it is ironic not to prepare for the technological advancements that have been developed for the greater benefit of society. India has also started witnessing the effects of I4.0, as robotics, artificial intelligence, the internet of things, and automation are being integrated into various industries alongside existing production

processes. The extent of this transformation depends on the cost structure and varying levels of capital investment within Indian industries. While the IT-BPM (Information Technology-Business Process Management) sector is a significant driving force behind automation, artificial intelligence, IoT, and analytics, it is not only facilitating and playing a crucial role in implementing I4.0 in manufacturing but is also undergoing changes within its own industry.

This study aims to comprehensively examine the current demand and supply of skills in India, particularly within the IT-BPM sector. Additionally, it seeks to review the performance and growth of the IT-BPM sector in recent years and assess the pace of technological progress within the industry. Secondary sources have been utilized to identify the skill gap and formulate a sound strategy for promoting decent work practices within the IT-BPM sector. The findings highlight the opportunistic potential of upskilling workers in embracing new technologies, as these upgraded skills can contribute positively to industry growth and the overall economy. The study argues that the skill gap crisis should be viewed as an opportunity for the digital transformation of the economy and as an engine of growth for the IT-BPM sector. However, significant challenges lie in the adaptability of workers and the need for reforms in the education sector to align with the evolving demands of the industry.

### **2.2.2 Technology use in HR field**

#### **International**

**Hill (1965)** - The author have conducted a study titled on *The British middle classes and the fear of automation in the 1960s*. This article by Hill examines concerns about automation among British middle classes in the 1960s. Drawing on survey data and media accounts, Hill analyzes perceptions that automation threatened the economic security and status of salaried professionals and managers. He explores how automation was believed to enable replacement of routine white-collar jobs involving data processing, record-keeping, and monitoring tasks. Hill also discusses proposed responses like promoting new industries and retraining to ease the transition. While finding minimal evidence of actual job losses by the mid-60s, the article highlights prevailing anxieties about automation's impacts. Hill provides cultural context around technology fears, elucidating the subjective perceptions of automation's risks. This work enriches understanding of social attitudes surrounding technological transitions and their impacts on the workforce.

**Mary Ann Von Glinow and Mary B. Teagarden (1988)** -The author have conducted a study titled on *The transfer of human resource management technology in Sino-U.S. cooperative ventures: Problems and solutions*. The authors explore the disparities between Chinese and U.S. human resource management (HRM) systems in terms of fundamental organizational and work-related assumptions regarding people and performance, rewards, training and development, and the educational background of HR practitioners. The article highlights key differences that act as barriers to the modernization of HRM practices in Sino-U.S. cooperative ventures. To address these challenges, the authors propose a normative framework for introducing contemporary HRM practices into such ventures. The framework aims to bridge the gap by integrating individuals and the enterprise, as well as aligning the enterprise with social and economic goals. The article concludes by emphasizing the implications of these findings for both research and practice, underscoring the importance of considering cultural and contextual factors in HRM implementation strategies. By shedding light on the discrepancies between Chinese and U.S. HRM systems and offering a normative framework, this research contributes to the advancement of HRM practices in Sino-U.S. cooperative ventures and enhances the understanding of cross-cultural HRM dynamics.

**Leontief and Duchin (1986)**- The author have conducted a study titled on *The British middle classes and the fear of automation in the 1960s*. In this book, the authors analyze the potential economic and labor impacts of increased automation and computerization in the workplace. Through modeling different scenarios, Leontief and Duchin examine how the diffusion of automation technologies could replace human labor and potentially cause technological unemployment. The models estimate effects on incomes, demand, economic growth, and requirements for workforce retraining. While predicting significant workforce dislocations, the authors also discuss responses like education and public works programs to ease transitions. The book provides an early conceptualization of the widespread impacts automation could exert on employment, incomes, and macroeconomic conditions. Though not all projections were fully realized, this pioneering work furthered scholarship on technology's societal ramifications. The authors deliver a balanced perspective encompassing benefits and challenges.

**Applegate et al. (1988)** - The author have conducted a study titled on *Information Technology and Tomorrow's Manager*. This article examines the impacts of information technology (IT) on management roles and practices. The authors synthesize prior research to identify key areas

transformed by IT, including decision making, coordination, control, and human resource management. They highlight how IT enables easy access to information and decentralizes decision authority. However, the authors also caution against overemphasizing technical efficiency over effectiveness and human factors. They argue that while IT changes how managers perform tasks, the fundamental nature of managerial work involving judgment, relationships, and ambiguity endures. The article concludes by proposing how management education must evolve to prepare future managers to integrate IT into social dynamics and organizational contexts. This work delivers an insightful analysis of how automation technologies are reshaping, but not eliminating, fundamental management functions. The authors strike a prescient balance between recognizing IT's benefits and risks.

**Renae Broderick and John W. Boudreau (1992)** -The author have conducted a study titled on *Human resource management, information technology, and the competitive edge*. The intensifying global competition is placing greater demands on U.S. managers to enhance their decision-making processes in terms of speed and quality. Information technology investments are often seen as a crucial tool for accelerating and improving managerial decision making. However, realizing the full potential of these investments has proven to be challenging. This is especially true in areas such as Human Resources (HR), where the longer implementation times associated with HR system changes make it an ideal candidate for leveraging information technology.

To gain a competitive edge in the global market, managers must effectively manage labor costs, motivate employees to deliver high-quality, customer-oriented performance, and continually seek out innovative approaches to achieve these goals. These objectives must be achieved while dealing with workforce reductions and the challenges posed by a culturally diverse and geographically dispersed workforce. Even routine tasks like employee record keeping and compliance with legal and regulatory requirements become exponentially more complex in this context. Such complexities necessitate the adoption of more advanced technology applications that go beyond simply streamlining routine HR tasks.

All managers have a vested interest in leveraging information technology to enhance their HR management practices. In this regard, we propose a framework that assists managers in assessing how HR information technology can enhance human resources management and contribute to gaining a competitive advantage. This framework aims to guide managers in

strategically leveraging technology to optimize HR practices and support organizational success.

**Blakeslee, J. A. (1999)** - The author have conducted a study titled on *Implementing the Deming philosophy with technology*. When it comes to quality management, Edward Deming is the OG. His philosophies revolutionized manufacturing and sparked a new era obsessed with continual improvement. But he laid out his ideas long before computers were a glimmer in Silicon Valley's eye. So how does Deming's wisdom translate now that tech rules the world?

That's where Blakeslee comes in. His 1999 paper dives into how technology, when done right, can turbocharge Deming's principles - not replace the human touch.

Blakeslee shows how digital tools help you flowchart processes end-to-end to spot chokepoints. Gather reliable data in real-time so you can identify issues faster. Refine solutions iteratively using Deming's famous PDCA cycle, where you Plan, Do, Check, and Act. The ultimate aim: optimize quality through ongoing small refinements.

But Blakeslee warns: don't forget Deming's people focus. No amount of shiny tech tools can substitute for management committing to quality, employees owning improvements, and number crunchers parsing the data for insights.

The takeaway? Use technology to power up Deming's ideals, not replace them. Refine processes constantly through the digital lens, but keep the human touch. That two-pronged approach is unstoppable. Blakeslee lights the way to fuse timeless wisdom with cutting-edge tools into a quality juggernaut.

**Hunter (2002)**-The author have conducted a study titled on *Total quality management and the Deming approach to quality management*. This book chapter by Hunter examines the synergies between total quality management (TQM) principles and W. Edwards Deming's influential approach to quality. Hunter provides an overview of Deming's philosophy, including key concepts like adoption of the new quality paradigm, cooperation vs competition, reducing dependence on inspection, and instituting training. The author then analyzes how Deming's ideas align with critical dimensions of TQM, such as top management commitment, employee empowerment, continuous improvement, customer focus, and use of statistical methods. Hunter highlights how information technology (IT) enables robust implementation of statistical process control, as emphasized by Deming. The chapter concludes by underscoring how



Deming's systemic approach complements and reinforces the core tenets of TQM. By exploring the nexus between Deming's principles and formal quality management practices, Hunter delivers valuable insights for organizations aiming to optimize quality through a blended approach. This work makes a notable contribution to the literature at the intersection of Deming's seminal work and modern quality management techniques.

**Casey Ichniowski and Kathryn Shaw (2003)** -The author have conducted a study titled on *Beyond Incentive Pay: Insiders' Estimates of the Value of Complementary Human Resource Management Practices*. The question of whether human resource management (HRM) practices, such as incentive pay, teamwork, training, and careful screening practices, contribute to increased productivity has garnered significant attention in the fields of organizational and personnel economics. To shed light on this matter, a new research approach termed "insider econometrics" is advocated, which involves delving deep into businesses to gather data and insights on how specific HRM practices impact production processes. The findings indicate that sets of complementary HRM practices have a positive impact on performance. However, the extent to which productivity rises depends on certain conditions. For instance, firms involved in producing complex products or those establishing new facilities tend to benefit more from these HRM practices. This research emphasizes the importance of understanding the context in which HRM practices are implemented and highlights the need to go beyond generalizations by examining specific production processes within organizations. By adopting the insider econometrics approach, researchers can obtain valuable data and insights that further our understanding of how HRM practices influence productivity, aiding in the development of tailored HRM strategies for different organizational contexts.

**Sharyn D Gardner, David P Lepak et al. (2003)** -The author have conducted a study titled on *Virtual HR: The impact of information technology on the human resource professional*. The rapid advancements and increased investment in information technology (IT) have opened up new possibilities for conducting business in unprecedented ways. However, despite its widespread adoption within organizations, the specific impact of IT on the roles of professionals remains unclear. To address this gap, this study focuses on the influence of IT on a specific professional segment, namely human resources (HR) professionals, and investigates how their jobs are affected by the extensive use of IT within the HR department. The research examines how HR professionals manage HR information and explores the changing expectations placed on them as a result of the growing reliance on IT. The findings indicate

that IT enables HR professionals to access and distribute information more efficiently, while also shaping the expectations surrounding their responsibilities. The implications of these findings are discussed, and avenues for future research in this area are proposed. By shedding light on the intersection of IT and HR professionals' roles, this study contributes to a deeper understanding of the implications of IT integration in the HR field.

**Samir Shrivastava and James B. Shaw (2004)** - The author have conducted a study titled on *Liberating HR through technology*. The anticipated growth of the enterprise-wide applications market is expected to be driven by the adoption of workforce management applications. However, the question remains: will organizations truly benefit from these applications? The prevalence of horror stories surrounding failed technology implementation efforts does little to instill confidence. To address this issue, this paper views the installation of HR technology as an innovation and presents a model that outlines the process of technology implementation. This model highlights several crucial factors that warrant attention from both researchers and practitioners. It becomes evident that organizations that embark on technology initiatives with the objective of empowering the HR function to concentrate on value-added activities are the ones most likely to unlock the full potential of technology. By prioritizing the alignment of technology with strategic HR objectives, these firms can effectively leverage technology to drive positive outcomes and maximize its benefits.

**José L. Gascó, Juan Llopis, et al. (2004)** -The author have conducted a study titled on *The use of information technology in training human resources: An e-learning case study*. This research paper explores the impact of information technology on human resources management (HRM), with a specific focus on training policies, using the case study of Telefonica, a telecommunications firm in Spain. The study examines the characteristics of the training model implemented by Telefonica to adapt to evolving environments and identifies the technologies employed, key actions taken, as well as the challenges and factors contributing to success in establishing an e-learning company. The paper also identifies success factors in training policies, including the importance of flexible time management for training, active involvement of trainers, implementation of control mechanisms to ensure training effectiveness, creation of high-quality content, promotion of interactive elements among trainers and students, utilization of standardized and developed technologies, and a gradual implementation approach. Looking ahead, Telefonica aims to continue progressing in the use of e-learning as a means of aligning

the training process with the emerging e-business culture. The company's objectives for the future involve leveraging e-learning to adapt and improve their training practices.

**Paul S. Hempel (2004)**-The author have conducted a study titled on *Preparing the HR profession for technology and information work*. The relationship between technology and human resource management (HRM) is reciprocal and far-reaching. Not only does technology impact the way HR tasks are administered through e-HR, but it also influences organizational structures and work processes. In light of these dynamics, HR professionals need to embrace and integrate technologies that facilitate the reengineering of HR functions. They must also be prepared to support organizational and work-design changes that arise from technological advancements and foster a managerial climate conducive to innovation and knowledge-based practices. However, an assessment of HR professional degree programs reveals that traditional HR education has inadequately equipped practitioners to tackle these challenges. To bridge this gap, it is imperative to revise HR education to place greater emphasis on technological issues. Additionally, HR educators must acquire the necessary skills and expertise to effectively teach these courses, enabling future HR professionals to navigate the intersection of technology and HRM with confidence and proficiency.

**Victor Y. Haines III, Geneviève Lafleur (2008)** - The author have conducted a study titled on *Information technology usage and human resource roles and effectiveness*. An empirical investigation is conducted to examine the relationship between information technology usage and the evolving roles and effectiveness of the human resource function. The study acknowledges the significant changes that have occurred within the human resource field, attributing these changes to the increased utilization of rapidly evolving information technology. The findings of the study reveal positive associations between information technology use and the engagement of HR professionals in strategic roles such as business partner and change agent. Moreover, the study demonstrates that information technology adoption is linked to improved technical and strategic effectiveness within the human resource function. These findings suggest that information technology has transformative potential in supporting human resource management applications. By employing relevant empirical data, this study contributes to the understanding of the impact of information technology on the HR function, highlighting its role in driving organizational success and effectiveness.

**Alok Mishra, Ibrahim Akman, et al. (2010)** - The author have conducted a study titled on *The Evolution of the Field of Human Resource Information Systems: Co-Evolution of*

*Technology and HR Processes.* The following paper initiates by presenting a series of observations regarding the utilization of information technology (IT) in the realm of human resource management (HRM) on a broader scale. Given the wide-ranging applications of IT, its influence in this domain has become increasingly evident. Subsequently, the paper proceeds to report on the outcomes of a survey conducted to explore current trends within organizations across different sectors in Turkey. Despite the longstanding interest of scholars in the impact of IT on HRM, empirical research in this field has been scarce, particularly in the Turkish context. The survey engaged 106 IT managers and professionals from various sectors, and the collected data indicates that IT is extensively employed in organizations to fulfill HRM functions within Turkey's dynamic economy. The results also reveal that while IT exerts an influence on HRM across all sectors to some degree, the specific types of IT employed vary significantly in recruitment, maintenance, and development tasks. However, the empirical findings highlight that these organizations do not consistently and effectively implement these technologies in the execution of HRM functions.

**Dianna L. Stone, Diana L. Deadrick et al. (2015)**- The author have conducted a study titled on *The influence of technology on the future of human resource management*. In recent times, the influence of information technology on human resources (HR) has been significant, yet there remains a dearth of comprehensive research exploring its effectiveness, particularly in relation to achieving HR objectives such as employee attraction, motivation, and retention. This gap in knowledge can be attributed to several limitations inherent in current HR systems. These limitations include the use of one-way communication channels, impersonal and passive interfaces, limited opportunities for interpersonal interaction, and the creation of artificial barriers between individuals and organizations. Consequently, the primary objective of this article is to critically examine the impact of technology on HR processes, synthesize existing literature on the subject, and analyze both the advantages and potential drawbacks associated with these systems. Furthermore, this article aims to provide insights for future research and practical applications, focusing on how technology can effectively facilitate HR processes. By addressing these areas, the article endeavors to contribute to a deeper understanding of the role and implications of technology in HR practices.

**Janet H. Marler and Emma ParrySchool (2015)** -The author have conducted a study titled on *Human resource management, strategic involvement and e-HRM technology*. It explores the debate surrounding the prediction that internet-based human resource management (e-

HRM) technology will enhance the strategic nature of HRM in organizations. Despite differing perspectives in the literature on the role of technology in organizations, this prediction has gained attention. To evaluate these theoretical perspectives, the authors utilize a large survey dataset comprising 5,665 companies from 32 countries. Non-recursive simultaneous equation models with instrumental variables are employed for empirical analysis. The findings reveal a direct and reciprocal relationship between strategic HR involvement and greater e-HRM capability, supporting both theoretical perspectives. The study highlights that strategic HRM and e-HRM are not mutually exclusive but rather interrelated. The results have implications for HRM theory, practice, and future research, shedding light on the influence of technology on HRM and guiding the development of effective HRM strategies in the context of technological advancements. By empirically examining the relationship between e-HRM technology and strategic HRM, this research contributes to the understanding of the role of technology in HRM and its impact on organizational practices.

**Richard D. Johnson, Kimberly M. Lukaszewski, et al (2016)**-The author have conducted a study titled on *The Evolution of the Field of Human Resource Information Systems: Co-Evolution of Technology and HR Processes*. This paper provides a comprehensive review of the development of the human resource information systems (HRIS) field, aiming to assess its progress and propose strategies for future research. The authors take a third-person perspective and examine the relationship between technological advancements and the HR field, considering four significant eras of technology: mainframe, client-server, ERP and web-based systems, and cloud-based systems. Within each era, they analyze how HR practices and requirements influenced the adoption of these systems and how the utilization of these systems facilitated the evolution of the HR field. Additionally, the authors explore the subfield of HRIS and its connection to the technological transformations observed in HR. Surprisingly, their findings reveal that research on technology's role in supporting HR has predominantly emerged within the past 15-20 years, driven by the adoption of the internet as a platform for HRIS delivery. In conclusion, the paper discusses the potential collaboration between scholars from information systems and human resources fields to further advance HRIS research.

**Ulrike Stefanie Foerster-Metz, Katrin Marquardt, et al. (2018)** -The author have conducted a study titled on *Digital Transformation and its Implications on Organizational Behavior*. The workforce dynamics within enterprises are being transformed by digital technologies such as advanced algorithms, robotics, and analytics, among others. In this study, the authors aim to

examine the implications of these emerging technologies on Organizational Behavior. While existing research has predominantly focused on the technological aspects, there is a lack of comprehensive understanding regarding the holistic view and its impact on organizational behavior. The novelty of this work lies in providing insights into the key digital technologies and their effects on both employees and leadership. To achieve this, the authors conducted a literature review and organized it based on technology and its implications for organizational behavior. The article is divided into three main sections. Firstly, the authors review the concepts of Organizational Behavior and digitalization to establish a theoretical framework. Subsequently, they analyze the impacts and effects of digitalization on leadership and employees. Finally, the findings are summarized and presented in a structured framework. By adopting this approach, the authors provide valuable insights into the transformative effects of digital technologies on organizational behavior and contribute to the existing body of knowledge in this field.

**Saeed Albukhitan (2020)** -The author have conducted a study titled on *Developing Digital Transformation Strategy for Manufacturing*. The digital era is characterized by rapid development, growth, innovation, and disruption, requiring organizations to adapt to the evolving digital landscape to survive. However, digital transformation goes beyond simply implementing new technology or upgrading systems. While these steps are crucial, organizations must also proactively anticipate and stimulate innovation to stay competitive. This necessitates strategic planning and active design for the future, which is where a digital transformation strategy comes into play. A digital transformation strategy enables leaders to assess their current level of digitalization, define their future vision, and determine the path to achieve it.

To protect against digital disruption, companies must cultivate three core competencies:

1. **Awareness of digital trends and advancements,**
2. **Informed decision-making based on data and insights, and**
3. **Agile implementation of digital initiatives.**

While developing and implementing a digital transformation strategy is a significant concern for manufacturing organizations, there is still an open question regarding how such a strategy can be tailored to the unique nature of the manufacturing sector. This paper aims to address this question by exploring how manufacturing can develop a digital transformation strategy

encompassing various aspects relevant to the industry's specific characteristics and requirements.

**Gulo A (2021)** -The author have conducted a study titled on *Transformational Human Resources Through Remote Working, and Upskilling for Digital PT Eigerindo MTI*. The COVID-19 pandemic has necessitated a shift in the role of Human Resource Management (HRM) within organizations to address the challenges posed by the virus and adapt to the "New Normal" environment. The primary focus of HRM has shifted towards preventing the transmission of COVID-19 among organizational members and ensuring the survival of the organization amidst the crisis. This paper aims to explore the transformational role and function of HRM during the COVID-19 pandemic and the subsequent transition to the New Normal.

One organization, PT Eigerindo Multi Produk Industri, can serve as a case study for understanding the appropriate HRM practices during these challenging times. Remote working has become crucial to maintain business continuity while ensuring the safety and well-being of employees. HRM should play a vital role in facilitating remote work arrangements, providing necessary support, and establishing effective communication channels.

Additionally, upskilling employees for the digital era is essential to adapt to the new work environment. HRM should identify the digital skills required for remote work and develop training programs or initiatives to enhance employees' digital capabilities. This upskilling effort will enable employees to navigate the digital landscape effectively and contribute to the organization's success.

## **National**

**Pawan S. Budhwar and Naresh Khatri (2001)** - The author have conducted a study titled on *HRM in Context: Applicability of HRM Models in India*. This article explores the dominant HRM practices in the Indian manufacturing sector by utilizing the core aspects of five main models of human resource management (HRM). The investigation takes place within the context of the recently liberalized economic environment in India, which has witnessed a significant increase in globalization. The article emphasizes the need for cross-national comparative research in HRM due to the growing global nature of businesses. It briefly examines the five HRM models, namely the Matching model, the Harvard model, the Contextual model, the 5-P model, and the European model, and identifies research questions

derived from these models that can shed light on HRM practices in different national and regional settings. The research findings are based on a questionnaire survey conducted among 137 large Indian firms, along with 24 in-depth interviews in an equal number of firms. The examination not only presents an overview of HRM practices in the Indian context but also provides insights into the underlying rationale for these practices. The article contributes to the fields of cross-national HRM and industrial relations research, offering valuable insights for policymakers and paving the way for further research in this area.

**Harish Jain, Mary Mathew, et al. (2012)** - The author have conducted a study titled on *HRM innovations by Indian and foreign MNCs operating in India: a survey of HR professionals*. This study aims to explore the innovative practices implemented by Indian and foreign high-tech firms in India, as well as the perceptions of Indian human resource management (HRM) managers regarding "ideal" staffing practices. The research question is addressed using both quantitative and qualitative methods. The study begins with three case studies conducted to examine the diverse innovative HR practices prevalent among technologically intensive multinational corporations (MNCs) operating in India. Subsequently, an online survey is conducted, involving 66 Indian HRM managers, to gain insights into their perspectives on innovation in the context of HRM practices.

The findings reveal notable differences between the perceptions of foreign and Indian firms regarding innovative HRM practices (HRMI). Foreign MNCs place a stronger emphasis on aligning the practices of parent and subsidiary companies, which is of less concern to Indian MNCs. Indian MNCs primarily focus on internal performance management and have implemented innovative practices to foster a culture of innovation. In contrast, foreign MNCs prioritize achieving a balance between the parent company and subsidiaries, as well as standardizing HRMI practices across different global regions. Moreover, foreign MNCs exhibit greater cost and performance consciousness compared to their Indian counterparts.

These findings shed light on the contrasting approaches to HRM practices between Indian and foreign high-tech firms in India, highlighting the emphasis on different aspects such as alignment, culture-building, and cost-performance considerations. The study contributes to the understanding of HRM practices in the high-tech sector and provides valuable insights for both Indian and foreign firms operating in India.



**Kamal and Ashish Kumar (2013)** - The author have conducted a study titled on *Impact of Technology Advancement on Human Resource Performance*. Information technology has increasingly integrated into human resource management as a structural factor and instrument that transforms the architect of organisations, business processes, and communication. While IT has an impact on HR, employees, customers, and suppliers have higher expectations of HR functions. IT is expected to boost HRM performance by shifting its focus from administration to strategic HRM.

**Sanchita C. Banerji (2013)** - The author have conducted a study titled on *A Study of Issues & Challenges of Implementation of Information Technology in HRM*. IT and its wide range of applications have not only impacted their operations but have also made a significant impact in every sphere of management. The organization's biggest challenge is the adoption and acceptance of these technologies, as re-designing and re-engineering HR functions is critical for the systematic and effective operation of the various functions. The creation of an appropriate managerial climate is critical for organisations that are innovative and knowledge-based. The precise integration of functionality and reporting devices can only result in the smooth and efficient operation of organisational functions.

**Prof. Gaurang V Purohit (2015)** - The author have conducted a study titled on *Impact of Technology on Working of HRM in India*. Technology has changed the business world many times over. The advent of computers and the internet in the information age has significantly increased that impact. Many businesses cannot function without the use of computer technology. This impact can be seen in nearly every aspect of business, including human resources, where technology continues to have a significant impact on HR practises. Agility pays rich dividends, and HR managers play an important role in creating a favourable work environment in which to initiate and implement changes quickly with the help of evolving technology. To remain competitive, most HR managers nowadays anticipate such cyclical changes and initiate proactive, less painful steps. In the long run, a company's ability to compete or survive in an increasingly competitive technological environment can be dramatically impacted by how effectively it uses its human resources.

**Mahima Nanda and Dr. (Ms.) Gurpreet Randhawa (2020)**-The author have conducted a study titled on *E-HRM in India: Present Status, Challenges and Future Prospects*. The adoption of digital technologies in the field of HRM offers numerous advantages; however, its implementation remains limited. This is particularly crucial for developing and under-

developed nations, as e-HRM becomes essential to reduce operational costs with limited resources. To ensure successful adoption, it is imperative to overcome the challenges associated with e-HRM and chart a clear path forward. India, while making strides towards embracing the digital revolution in various administrative and management domains, faces obstacles arising from societal, cultural, infrastructural, and economic barriers that hinder e-HRM adoption. This paper focuses on the current status, challenges, and future prospects of e-HRM in India, with the aim of providing guidance to policymakers and organizations on the successful adoption and implementation of e-HRM practices. By shedding light on the specific context of India, the paper aims to pave the way for effective e-HRM strategies and policies in the country, taking into account the unique challenges and opportunities that arise from its societal and economic landscape.

**Akansha Mer, Amarpreet Singh Virdi (2023)** -The author have conducted a study titled on *Navigating the Paradigm Shift in HRM Practices Through the Lens of Artificial Intelligence: A Post-pandemic Perspective*. The COVID-19 pandemic has caused significant disruptions in the economy, leading to a transformation in HRM practices. AI-enabled HRM practices now revolve around effectively managing remote and contingent workforces, promoting mindfulness and social capital, enhancing employee engagement, and facilitating reskilling and upskilling towards new competencies. AI plays a crucial role in ensuring seamless remote work by streamlining processes such as recruitment, onboarding, career development, performance management, learning, and talent management. In the post-pandemic era, AI-powered tools leveraging data mining, predictive analytics, big data analytics, natural language processing, intelligent robots, machine learning, and virtual/augmented reality have emerged as effective means of managing HRM practices. These technological advancements contribute to improved organizational performance, employee well-being, automation, and cost reduction. The integration of AI in HRM practices presents new opportunities for organizations to adapt to the changing work landscape and drive success in the digital era.

## **2.2 Research gap**

The role of organizational initiatives in addressing HR Professional's insecurity and reluctance to upskill in a technology-driven environment remains understudied. This study aims to fill this gap by investigating the threat of job loss due to technology prominence, exploring whether organizations accommodate employees reluctant to upskill, examining sustenance initiatives to help employees adopt changing technologies, and assessing the potential replacement of

functional entry-level HR jobs by machines. Understanding how organizations address these challenges is crucial for building a resilient workforce. By examining the role of organizational initiatives in upskilling and inclusion, this research seeks to provide insights into managing employee concerns and facilitating successful adaptation to the evolving technological landscape within organizations. This research also seeks to find the role of technology in HR field as a potential threat or not, which is not found in any of the reviewed literature.

**CHAPTER 3**  
**RESEARCH METHODOLOGY**

### **3.1 TITLE OF THE STUDY**

Upskilling as a pre-requisite in the technology driven environment.

### **3.2 RESEARCH DESIGN**

The study adopts a quantitative research methodology, which focuses on objective measurements and the statistical analysis of numerical data gathered using questionnaires for the survey. Quantitative analysis aims to generalize findings across different groups or explain specific phenomena. This study examines if technology advancement which may potentially replace HR employees jobs. The research design employed is a cross-sectional design. The cross-sectional approach is one of the most well-known and often employed research designs. In this kind of study, either the entire population or a portion of it is chosen, and information is gathered from the chosen participants to aid in addressing research concerns at a specific point in time. Data is collected from HR professionals from different sectors mainly IT, manufacturing and service.

### **3.3 RESEARCH VARIABLES**

#### **Dependent Variable:**

##### **Job Sustainability**

- Refers to the ability of employees to sustain their jobs amidst introduction of new technologies.
- Presumed to be influenced by technology changes as jobs may be displaced or changed.
- Observed measure of whether employees are able to continue in their jobs or need to switch roles.

##### **Adaptation to technological changes**

- How well employees are able to adapt to new technologies in the workplace.

##### **Career growth and advancement**

- Opportunities for career development amidst tech changes provided by the employer and initiatives taken by employee.

##### **Upskilling Competencies**

- Refers to skills and capabilities of employees to learn and apply new knowledge/skills.
- Expected to be impacted by technology changes demanding new skillsets.
- Observed through measures of employee capability and willingness to learn new skills and use new technologies.

#### **Independent Variables:**

##### **Demand for upskilling**

- The requirements or needs for employees to learn new skills due to advancing technologies. This is influenced by the changes in technology which state the inevitability of the skills to thrive in a given job or profile.

##### **Prominence of new technology at work**

- The extent to which new technologies are visible/prevalent in the workplace.

##### **Inclusionary practices towards technology advancement**

- The policies and initiatives adopted by organizations to integrate new technologies that enable workers adopt or cope up with the technology by viewing it as an opportunity.

### **3.4 UNIVERSE AND SAMPLE OF STUDY**

#### **3.4.1 Universe of the study**

The study focuses on the Working HR professionals span across IT, Manufacturing, Service in Kerala.

#### **3.4.2 Sample of the study**

80 HR professionals that were randomly shortlisted or selected as participants for the study.

### **3.5 SAMPLING DESIGN**

Purposive sampling was used to collect data from the respondents. This is a non-probability sampling method that was chosen based on the characteristics of the population and the objectives of the study. Purposive sampling is used when we want to reach a specific subset of people, because all study participants are chosen because they fit a certain profile. Sampling framework consists of HR professionals practicing in the IT, manufacturing and service sector.

### **3.6 UNIT OF THE STUDY**

One identified and recruited respondents of the study who is the practicing HR professionals from service, manufacturing, and IT sector of Kerala.

### **3.7 SOURCES OF DATA**

#### **3.7.1 Primary Data**

Primary data was collected using a self-administered questionnaire designed by the researcher himself.

#### **3.7.2 Secondary Data**

The researcher has collected secondary data from newspapers, journal articles, internet sources and other magazines.

### **3.8 TOOLS OF DATA COLLECTION**

A questionnaire was prepared to collect data regarding the HR professional's upskilling requisite in a technology-driven environment and the challenges they faced with the rapid change of technology. The questionnaire consists of 29 questions, including the demographic details of the respondents. The questionnaire shows a score of .822 in the Cronbach's Alpha test for reliability statistics.

### **3.9 PILOT STUDY**

A pilot study was carried out for assessing the feasibility of the study among the respondents. 16 respondents were selected randomly, and data was collected. After analysis of the data, necessary corrections and modifications were made to the questionnaire.

### **3.10 SCOPE OF THE STUDY**

This study pertains to HR professionals in Kerala. The scope of the research goes beyond to other sectors which were not included in this study.

### **3.11 DATA COLLECTION**

The researcher used the questionnaire administered in the form of Google Forms to collect the primary data from the respondents.

### **3.12 TOOLS FOR DATA ANALYSIS**

The researcher used the Statistical Package for Social Sciences (SPSS), a software package for statistical analysis doing the data analysis. Both descriptive and inferential statistics were used for the analysis.

### **3.13 LIMITATIONS OF THE STUDY**

The study is subjected to the following limitations:

1. The information gathered from the selected group of participants may reflect specific characteristics of central and south Travancore in the state of Kerala. It is important to note that this localized focus could pose limitations when attempting to apply the findings to a broader context.
2. Data collection was tough and challenging because of the resistance from the part of respondents in finding time to answer through Google forms.



**CHAPTER 4**  
**DATA ANALYSIS**

## 4.1 Introduction

This chapter discusses data analysis using SPSS.22 (Statistical Package for Social Sciences) and Microsoft Excel. The data used for analysis was collected from working HR professionals from the Thiruvananthapuram district of Kerala. The data were collected using a questionnaire through Google Forms. The questionnaire was designed in such a way as to contain various dimensions to measure the upskilling needs and practices in the HR profession due to changes in technology. There were distinct questions to understand the inclusionary practices, demand for upskilling, and prominence of technology.

1. Frequency analysis of selected demographic variables was carried out to draw inferences on their implications on the research objectives.
2. Based on the rationale drawn through the research literature reviewed, a cluster of questions that meaningfully explain objectives under study form part of the tool had been selected and summated score was computed. This score logically indicates the trend prevailing while performing cross-tabulation analysis as well.

## 4.2 Analysis of Demographic Variables

The demographic variables considered for the study are gender, age, type of organization, and annual salary.

### 4.2.1 Gender-wise Participation of Respondents in the Sample.

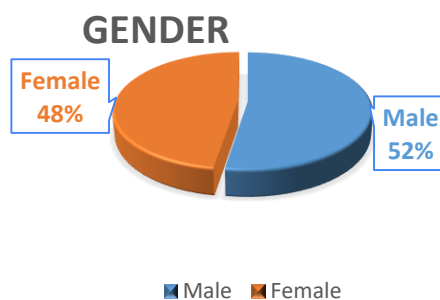


Fig No. 4.2 1.

*Source: Primary Data*

The respondents in the study are the working HR professionals from the Thiruvananthapuram district from three sectors namely IT, Manufacturing, and Service. Among the 80 respondents, 42 were male and 38 were female. This constitutes a percentage of 47.5 % of female and 52.5 % of male respondents in the sample population.

#### 4.2.2 Organisation type-wise participation of respondents in the sample

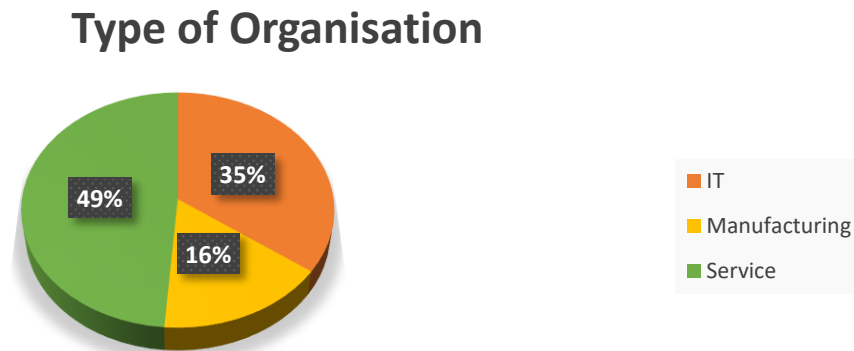


Fig No. 4.2 2.

*Source: Primary Data*

The data shows respondents' distribution based on the organization they belong to. Among the 80 respondents, 35% are from the IT sector, 16.3% are from the manufacturing sector, and 48.8% are from the service sector. This indicates that majority of respondents work in the service sector, followed by the IT sector and manufacturing sector. The distribution allows for an analysis of the perceptions and experiences of individuals from different sectors, providing valuable insights into the specific challenges and dynamics of each sector about the research topic.

#### 4.2.3 Annual Salary wise participation of Respondents in the Sample

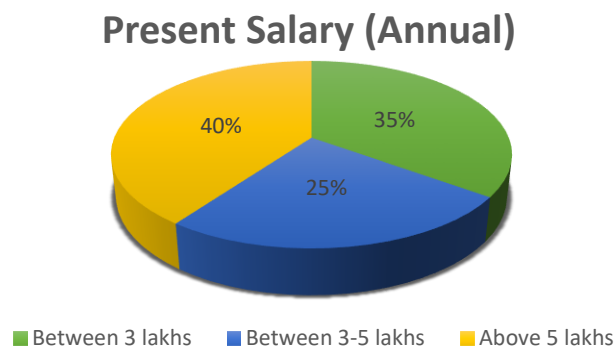


Fig No.4.2 3.

*Source: Primary Data*

The data shows that most of the respondents belongs to the above 5 lakhs (annual) category (40%).

#### 4.2.4 Educational qualification wise participation of respondents in the sample

## Educational Qualification

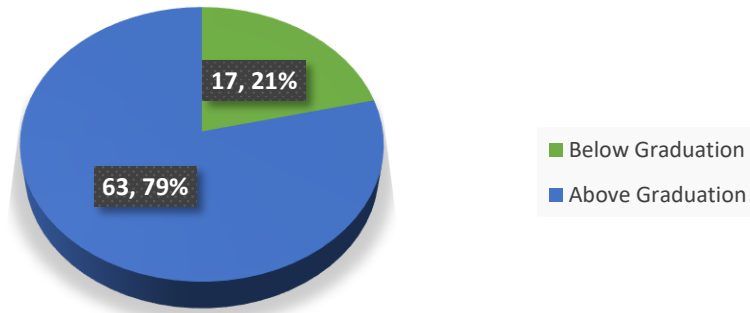


Fig No.4.2 4.

*Source: Primary Data*

The distribution of educational qualifications among the respondents provides insights into the academic background of the sample. The majority of respondents hold degree above graduation, which accounts for 79% of the sample. Below graduation accounts for 21% of the sample. This suggests that the sample consists of individuals with diverse educational qualifications, with a significant portion holding above graduation level degree. This varied educational background can contribute to a rich and diverse perspective on the research topic.

### 4.2.5 Assessment of Training Satisfaction for Technological Changes among Sampled Respondents

Table No. 4.2. 1.

*Source: Primary Data*

<b>My organization ensures adequate training is provided in tandem with technology changes.</b>	<b>Frequency</b>	<b>Percent</b>
<b>Strongly Agree</b>	1	1.3
<b>Agree</b>	2	2.5
<b>Somewhat Agree</b>	3	3.8
<b>Disagree</b>	34	42.5

<b>Strongly Disagree</b>	40	50.0
<b>Total</b>	80	100.0

In responses regarding the organization's provision of adequate training about technology changes that were found among the 80 respondents, only 1.3% strongly agree and 2.5% agree that their organization ensures sufficient training. The majority of respondents, 50%, strongly disagree, while 42.5% disagree. A small percentage, 3.8%, remain somewhat Agree. These results indicate a significant dissatisfaction with the organization's training efforts in response to technology changes, with a large proportion of respondents expressing disagreement. This suggests the need for improved training initiatives to align with the evolving technological landscape.

#### **4.2.6 Assessing Employer Commitment to Upskilling amidst Industry Technological Shifts.**

Table No. 4.2.2

Source: Primary Data

<b>Employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.</b>	<b>Frequency</b>	<b>Percent</b>
<b>Strongly Agree</b>	5	6.3
<b>Agree</b>	10	12.5
<b>Somewhat Agree</b>	23	28.8
<b>Disagree</b>	30	37.5
<b>Strongly Disagree</b>	12	15.0

<b>Total</b>	80	100.0
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In the responses regarding the perception of employer commitment to upskilling and training opportunities about rapidly changing technology in the industry, from the 80 respondents, 6.3% strongly agree and 12.5% agree that their employer's commitment to upskilling is insufficient. A significant percentage, 37.5%, disagree with the statement, and 15% strongly disagree. The largest proportion, 28.8%, remains Somewhat Agree on the matter. These findings indicate a mixed sentiment among the respondents, with a considerable number expressing dissatisfaction and a need for greater employer commitment to keeping up with technological advancements. There is a clear opportunity for employers to address these concerns and provide more comprehensive upskilling and training opportunities to ensure their workforce remains competitive in the rapidly changing industry.

### **4.3 Frequency analysis of questions**

#### **4.3.1 Training provided by Organisation with respect to technological change.**

**My organization ensures adequate training is provided in tandem with technology changes.**

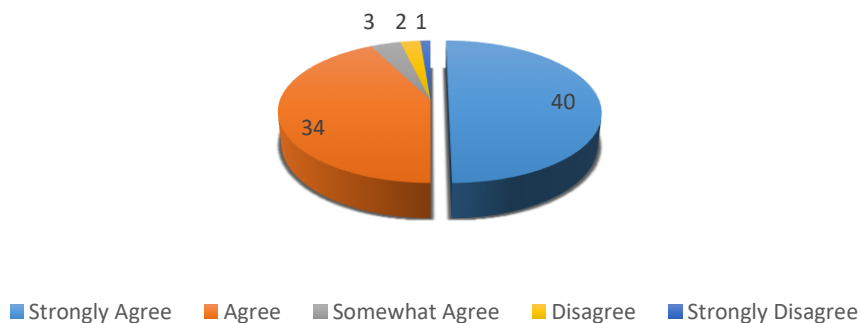


Fig No. 4.3 1.

*Source: Primary Data*

The data reveals that a significant majority of respondents (92.5%) have a positive perception regarding their organization's provision of adequate training in conjunction with technology changes. This indicates that these organizations prioritize keeping employees well-equipped with the necessary skills to adapt to evolving technologies.

#### **4.3.2 Upskill initiative by the Organisation to eliminate fear of job loss.**

**My organization takes the initiative to upskill its employees to eliminate the fear of job loss.**

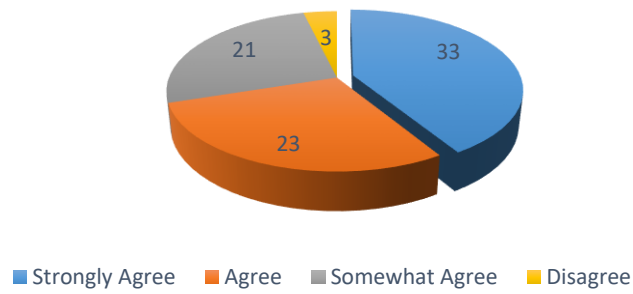


Fig No. 4.3 2.

*Source: Primary Data*

The statistics reveals that a significant majority of respondents (96.3%) believe that their organization takes the initiative to upskill its employees, thereby eliminating the fear of job loss. This indicates a positive perception among employees regarding the commitment of their organization to invest in their professional development and future-proof their careers.

**4.3.3 Pressure due to frequent technology change.**

**I FEEL PRESSURE TO UPSKILL IN MY JOB DUE TO RAPIDLY CHANGING TECHNOLOGY.**

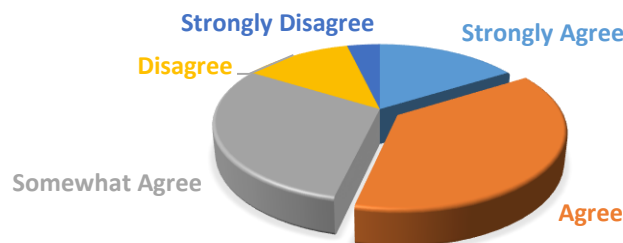


Fig No. 4.3 3.

*Source: Primary Data*

The figures show that a significant proportion of respondents (83.8%) feel pressure to upskill in their jobs due to rapidly changing technology. This indicates a recognition of the importance of staying updated with technological advancements. It also suggests that the evolving nature of technology is creating a sense of urgency among employees to acquire new skills and knowledge.

**4.3.4 Employee’s response to ease of work due to frequent technology change.**

**Implementation of new technology has resulted in ease of doing work, therefore not a threat.**

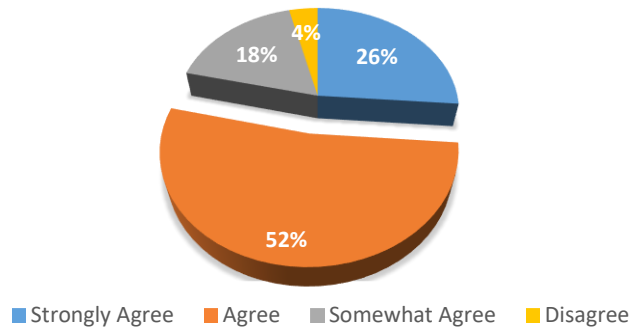


Fig No. 4.3 4.

*Source: Primary Data*

The numbers indicate that a majority of respondents (79.1%) perceive the implementation of new technology as resulting in ease of doing work, rather than a threat. This suggests that the introduction of new technology has positively impacted their work experience and made tasks more manageable. The high percentage of agreement (78.8%) in the strongly agree and agree categories indicates a general consensus among employees.

**4.3.5 Employee’s response to the risk of job loss.**

There is a higher risk of job replacement by technology for HR employees as most of the job roles are repetitive in nature and can be automated.

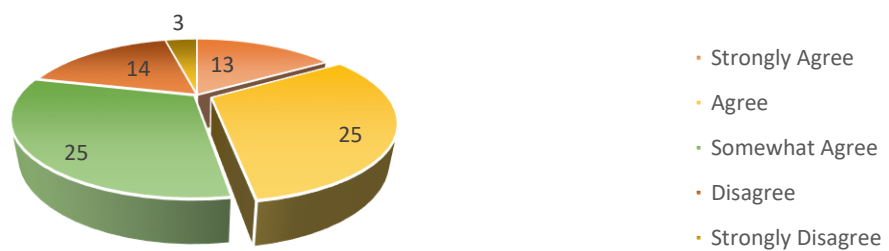


Fig No. 4.3 5 .

*Source: Primary Data*

The figures show that a significant portion of respondents (78.8%) agree or strongly agree that HR employees face a higher risk of job replacement by technology. This suggests a concern among employees about the potential automation of repetitive job roles within the HR field. It is worth noting that a considerable number of respondents (31.3%) hold a somewhat agree perspective, indicating some uncertainty or mixed opinions on the matter.

**4.3.6 Commitment in upskilling workforce with changes in technology at the industry.**



I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.

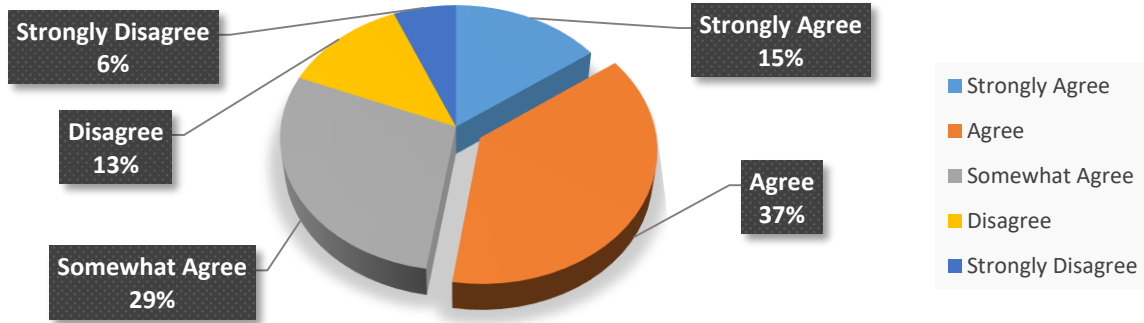


Fig No. 4.3.6.

Source: Primary Data

The statistics indicate that a significant proportion of respondents (81.3%) feel that their employer's commitment to upskilling and training opportunities is insufficient to keep up with rapidly changing technology. This highlights a perceived gap between the expectations of employees and the actions taken by employers in addressing technological advancements. It is important for organizations to recognize the importance of upskilling and provide adequate support and resources to enable employees to stay competitive in the evolving industry landscape. Failing to do so may lead to employee dissatisfaction and hinder organizational growth and adaptation to technological changes.

#### 4.3.7 Response to Upskilling's Impact on Job Security

Upskilling has increased job security in a technology-driven environment.

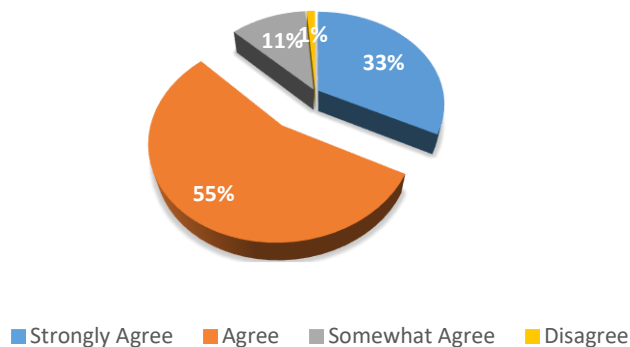


Fig No. 4.3 7.

Source: Primary Data

The numbers show that a majority of respondents (87.5%) agree or strongly agree that upskilling has increased job security in a technology-driven environment. This indicates that

individuals perceive upskilling as a valuable strategy to enhance their job security in the face of rapid technological advancements. The high percentage of agreement suggests that employees recognize the importance of continuously upgrading their skills to adapt to changing industry demands and protect their employment. Organizations should prioritize upskilling initiatives to provide employees with the necessary tools and knowledge to thrive in a technology-driven workplace and foster a sense of security among their workforce.

#### 4.3.8 Experience of layoff due to technology change.

JOB DISPLACEMENT OR LAYOFFS HAVE BEEN EXPERIENCED OR WITNESSED AS A RESULT OF THE IMPLEMENTATION OF NEW TECHNOLOGY.

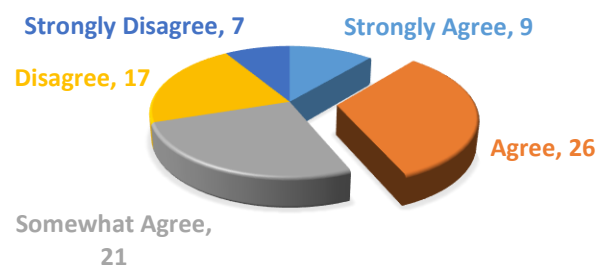


Fig No. 4.3 8.

*Source: Primary Data*

The numbers indicate that a significant portion of respondents (70%) agree or strongly agree that job displacement or layoffs have been experienced or witnessed as a result of implementing new technology. This proposes that technological advancements have had an impact on employment stability in some cases. The relatively high percentage of agreement highlights the potential disruption that new technology can bring to the workforce.

### 4.3.9 Upskilling programme's effectiveness in filling the gap between skill set and technology.

Upskilling programs are effective in reducing the gap between new technology changes and employee's lack of skill sets.

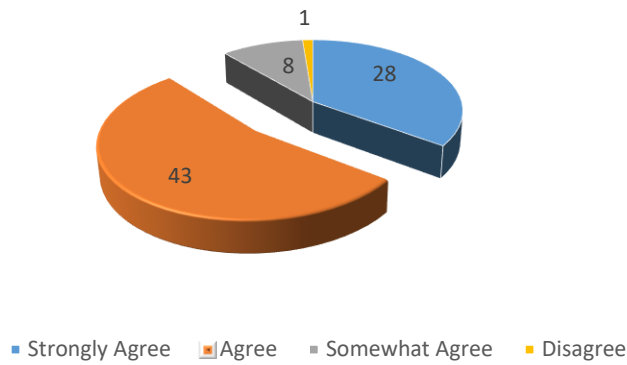


Fig No. 4.3 9.

Source: Primary Data

The facts show that a majority of respondents (88.8%) agree or strongly agree that upskilling programs are effective in reducing the gap between new technology changes and employees' lack of skill sets. This put forward that investing in upskilling initiatives can be beneficial in equipping employees with the necessary skills to adapt to evolving technology. The high percentage of agreement reflects the perceived value and positive impact of upskilling programs. Organizations that prioritize upskilling initiatives are likely to experience smoother transitions during technological advancements, leading to increased employee competence and productivity.

### 4.3.10. Technology change and job security.

The introduction of technology has led to concerns about job security in some roles.

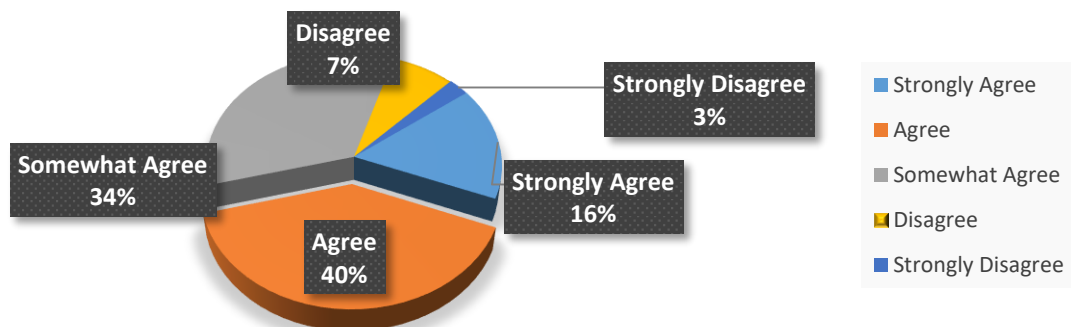


Fig No. 4.3 10.

Source: Primary Data

The data reveals that a significant proportion of respondents (90.1%) agree or strongly agree that the introduction of technology has led to concerns about job security in some roles. This indicates that employees perceive technology as a potential threat to their job stability. The high percentage of agreement underscores the need for organizations to address these concerns and provide reassurance to their workforce.

#### 4.3.10. Integration of technology without taking away jobs.

My organization strives to integrate new technology while ensuring a seamless transition for existing employees until their superannuation.

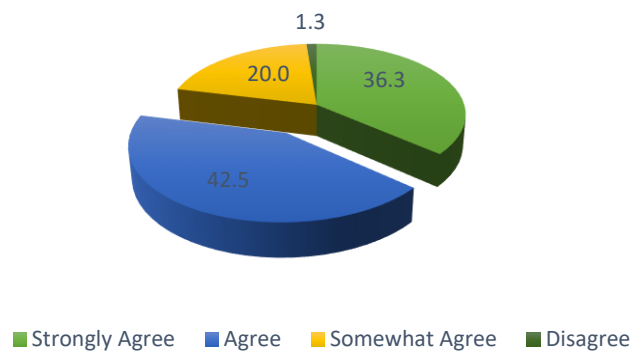


Fig No. 4.3 11.

*Source: Primary Data*

The facts indicate that a majority of respondents (98.8%) either strongly agree, agree, or somewhat agree that their organization strives to integrate new technology while ensuring a seamless transition for existing employees until their superannuation. This highlights the commitment of the organization towards embracing technological advancements while prioritizing the well-being and professional development of its employees. The high percentage of agreement recommends that employees feel supported during the transition and perceive their organization as proactive in managing the impact of technology on their roles. This positive perception can contribute to a more harmonious and successful integration of new technology within the organization.

## **4.4 Cross tabulations**

The crosstabulation analysis conducted in this dissertation examines the relationship between different variables in the research topic. By analyzing the intersection of these variables, valuable insights can be gained into patterns, trends, and connections. This analysis provides a comprehensive understanding of the research topic by exploring the links and complexities between the variables, offering a deeper insight into the subject matter. A summated mean score of items identified from the tool are used in crosstabulations.

### **4.4.1. Relationship between organization type and prominence of technology**

<b>Type of Organisation * Level of Prominence of Technology</b>				
<b>Level of Prominence of Technology</b>		<b>Low</b>	<b>High</b>	<b>Total</b>
<b>Type of Organisation</b>	<b>IT</b>	10	18	28
	<b>Manufacturing</b>	1	12	13
	<b>Service</b>	11	28	39
<b>Total</b>		22	58	80

Table No. 4.4 1

Source: Primary Data

#### **Interpretation:**

The majority of respondents (58 out of 80) reported a high level of prominence of technology in their organization, while 22 reported low prominence. In the IT sector, 18 out of 28 respondents indicated high technology prominence. In manufacturing, 12 out of 13 respondents reported high technology prominence. In the service sector, 28 out of 39 respondents indicated high technology prominence.

#### **Inference:**

This shows that technology is indeed very prominent for a majority of IT organizations as expected. The data indicates that a significant majority of manufacturing organizations have high levels of technology integration. It also suggests that technology plays a major role in most service organizations represented in the sample. Overall, the cross-tabulation data shows that across IT, manufacturing and service sectors, most organizations were perceived to have high levels of technology prominence by the survey respondents. Manufacturing had the highest percentage (92%) of respondents reporting high technology prominence, followed by service (72%) and IT (64%).

#### 4.4.2. The level of inclusionary practices with type of organisation

Table No. 4.4.2

Source: Primary Data

Type of Organisation * Level of Inclusionary Practices				
Level of Inclusionary Practices		Low	High	Total
Type of Organisation	IT	0	28	28
	Manufacturing	0	13	13
	Service	2	37	39
Total		2	78	80

Interpretation:

The cross-tabulation table shows the relationship between type of organization and level of inclusionary practices reported by survey respondents. The data indicates that a vast majority of respondents (78 out of 80) reported high levels of inclusionary practices in their organizations. Specifically, all 28 respondents from the IT sector and all 13 respondents from manufacturing perceived high inclusionary practices. In the service sector, 37 out of 39 respondents reported high inclusionary practices, while only 2 respondents indicated low levels.

Inference:

The results demonstrate that organizations across IT, manufacturing and service sectors overwhelmingly exhibit strong inclusionary practices as perceived by survey respondents. The 100% high inclusionary practices reported in IT and manufacturing sectors underscores that these organizations are proactively embracing inclusive strategies. The 95% high engagement in the service sector also reflects a strong focus on inclusionary practices. Overall, this suggests that most organizations represented in the sample are prioritizing inclusive initiatives, particularly through upskilling measures, in order to promote sustainable employee retention even as new technologies emerge.

#### 4.4.3. Upskilling demand across organization types

Table No. 4.4.3

Source: Primary Data

<b>Type of Organisation * Level of Demand for Upskilling</b>				
<b>Level of Demand for Upskilling</b>		Low	High	Total
<b>Type of Organisation</b>	IT	10	18	28
	Manufacturing	4	9	13
	Service	15	24	39
<b>Total</b>		29	51	80

Interpretation:

The cross-tabulation depicts the relationship between type of organization and level of demand for upskilling as reported by the survey respondents. The data shows 29 respondents indicated low demand while 51 reported high demand for upskilling in their organizations. In the IT sector, 18 out of 28 respondents perceived high demand for upskilling. In manufacturing, 9 out of 13 respondents reported high demand. In the service sector, 24 out of 39 respondents saw high demand for upskilling.

Inference:

The results indicate that the service sector had the highest percentage (62%) recognizing the need for upskilling, followed by IT sector with 64% reporting high demand. While the majority of manufacturing respondents also saw high demand, it was comparatively lower at 69%. Overall, the data reflects that across sectors, a significant number of respondents acknowledge the imperative for upskilling, with the service sector perceiving the greatest urgency. This suggests that organizations must prioritize meeting the upskilling demand to equip workforces with the evolving skills imperative for the technology transformation.

#### 4.4.4. Technology's impact on job demands and employer's commitment towards upskilling

Table No. 4.4.4.

Source: Primary Data

		19. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.					Total
		Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	
18. The increasing use of technology in the workplace has made the job more demanding.	Strongly Agree	7	3	3	1	0	14
	Agree	3	21	9	5	2	40
	Somewhat Agree	2	5	11	3	3	24
	Disagree	0	1	0	1	0	2
Total		12	30	23	10	5	80



Inference:

In this analysis, 60% of respondents agree or strongly agree that the increasing use of technology in the workplace has made their job more demanding. Besides, 47.5% of respondents feel that their employer's commitment to upskilling and training opportunities is insufficient to keep up with rapidly changing technology.

Interpretation:

The findings reveal that a significant portion of respondents (75%) perceive the increasing use of technology as making their job more demanding. Furthermore, almost half of the respondents (47.5%) feel that their employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology. This indicates a potential gap in addressing the skills needed in the industry. Organizations should prioritize upskilling initiatives and invest in training programs to bridge this gap, enhancing employee satisfaction and ensuring competitiveness in the technology-driven landscape.

#### 4.4.5. Increased use of technology on job demands and upskilling challenges in HR

Table No. 4.4.5.

Source: Primary Data

		17. Implementing upskilling initiatives in the HR department is challenging, despite the benefits they offer in helping employees stay competitive in a technology-driven work environment.					Total
		Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	
18. The increasing use of technology in the workplace has made the job	Agree	0	1	1	0	0	2
	Somewhat Agree	0	2	11	8	3	24
	Disagree	0	0	11	25	4	40

more demanding.	Strongly Disagree	1	0	3	5	5	14
Total		1	3	26	38	12	80

**Inference:**

The data shows that among the respondents, 15% strongly agree, 31.25% agree, and 30% somewhat agree that implementing upskilling initiatives in the HR department is challenging, despite the benefits they offer in helping employees stay competitive in a technology-driven work environment. In terms of the increasing use of technology making the job more demanding, 17.5% strongly agree, 43.75% agree, and 30% somewhat agree.

**Interpretation:**

The results indicate that there is a clear perception among respondents that implementing upskilling initiatives in the HR department is challenging, despite recognizing the benefits they offer. This suggests a potential gap between the aspirations of employees to enhance their skills and the organizational support provided. Additionally, the majority of respondents feel that the increasing use of technology has resulted in more demanding jobs. These insights highlight the importance of addressing the challenges of upskilling implementation and providing adequate support to help employees cope with the changing technology landscape.

**4.4.6. Demand for upskilling and the impact of new technology in the workplace.**

Table No. 4.4.6.

Source: Primary Data

<b>10. To survive in a job where technology is changing the status quo, upskilling is becoming increasingly demanding. * 23. Implementation of new technology has resulted in ease of doing work, therefore not a threat.</b>				
23. Implementation of new technology has resulted in ease of doing work, therefore not a threat.				Total
Strongly Agree	Agree	Somewhat Agree	Disagree	

10. To survive in a job where technology is changing the status quo, upskilling is becoming increasingly demanding.	Strongly Agree	16	20	6	3	45
	Agree	5	18	6	0	29
	Somewhat Agree	0	4	2	0	6
Total		21	42	14	3	80

**Inference:**

The result reveals a relationship between the perception of new technology's impact on ease of work and the increasing demand for upskilling. Among respondents, 52.5% strongly agree or agree that new technology has resulted in ease of doing work without being a threat. Additionally, 31.25% somewhat agree with this statement. This indicates a positive perception of the impact of technology implementation. Moreover, the majority (81.25%) perceive upskilling as increasingly demanding to survive in a rapidly changing job environment.

**Interpretation:**

The data indicate that a considerable percentage of respondents have a positive perception of the impact of new technology on ease of work. This implies that the implementation of technology has brought about improvements in work processes and efficiency. However, it is crucial to address the increasing demand for upskilling, as a significant number of respondents feel the need to acquire new skills to survive in a technology-driven job environment. This highlights the importance of organizations investing in upskilling programs and providing training opportunities to ensure employees' continuous development and job security.

**4.4.7. Is impact of new technology a threat?**

Table No. 4.4.7.

Source: Primary Data

**6. My organization sees new technology as employee enablers, not as replacements. \* 23.  
Implementation of new technology has resulted in ease of doing work, therefore not a threat.**

		23. Implementation of new technology has resulted in ease of doing work, therefore not a threat.				Total
		Agree	Somewhat Agree	Disagree	Strongly Disagree	
6. My organization sees new technology as employee enablers, not as replacements.	Strongly Agree	0	1	0	0	1
	Agree	0	0	1	0	1
	Somewhat Agree	3	5	9	1	18
	Disagree	0	1	19	7	27
	Strongly Disagree	0	7	13	13	33
Total		3	14	42	21	80

**Inference:**

Among the respondents, 1.25% strongly agree and 1.25% agree that their organization sees new technology as employee enablers. In terms of the ease of doing work without feeling threatened, 6.25% somewhat agree, 33.75% disagree, and 41.25% strongly disagree.

Thus, the majority of respondents (82.5%) do not perceive the implementation of new technology as resulting in ease of work without being a threat.

**Interpretation:**

The data indicate that a small percentage of respondents (2.5%) strongly agree or agree that their organization sees new technology as employee enablers. However, when it comes to the ease of doing work without feeling threatened, a significant proportion (75%) of respondents either somewhat agree, disagree, or strongly disagree. In fact, the majority (82.5%) do not

perceive the implementation of new technology as resulting in ease of work without being a threat. These findings highlight the need for organizations to address concerns and provide support to employees during technology implementation to ensure a smoother transition and better acceptance of new technologies.

#### 4.4.8. Impact of new technology at the workplace in relation to job security

Table No. 4.4.8.

Source: Primary Data

23. Implementation of new technology has resulted in ease of doing work, therefore not a threat. * 15. Upskilling has increased job security in a technology-driven environment.						
		15. Upskilling has increased job security in a technology-driven environment.				Total
		Strongly Agree	Agree	Somewhat Agree	Disagree	
23. Implementation of new technology has resulted in ease of doing work, therefore not a threat.	Strongly Agree	14	6	1	0	21
	Agree	8	27	7	0	42
	Somewhat Agree	3	10	1	0	14
	Disagree	1	1	0	1	3
Total		26	44	9	1	80

#### Inference:

Among the respondents, 32.5% strongly agree and 10% agree that upskilling has increased job security in a technology-driven environment. Additionally, 16.25% somewhat agree with this statement. However, 1.25% disagree that upskilling has increased job security. The results indicate a positive perception of the impact of upskilling on job security, with a majority (58.75%) either strongly agreeing or agreeing.

**Interpretation:**

The results highlight the importance of upskilling initiatives in fostering job security in a technology-driven environment. It reveals that a significant portion of the respondents (42.5%) acknowledge the positive influence of upskilling on job security in a technology-driven environment. This perception is further strengthened by the fact that 32.5% strongly agree, 10% agree, and 16.25% somewhat agree with this statement. However, it is worth noting that a small percentage (1.25%) disagrees with the notion of upskilling enhancing job security.

**4.4.9. Impact of New Technology on Job Displacement and Employer's Commitment to Upskilling.**

Table No. 4.4.9.

Source: Primary Data

		19. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.					Total
		Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	
21. Job displacement or layoffs have been experienced or witnessed as a result of the	Strongly Agree	5	1	3	0	0	9
	Agree	3	17	5	1	0	26
	Somewhat Agree	0	9	9	3	0	21

implementation of new technology.	Disagree	3	2	5	4	3	17
	Strongly Disagree	1	1	1	2	2	7
Total		12	30	23	10	5	80

**Inference:**

The cross-tabulation between job displacement or layoffs due to new technology implementation (Question 21) and perceived insufficiency of employer's commitment to upskilling (Question 19) revealed that, among respondents who strongly agreed with job displacement, 55.6% also strongly agreed with insufficient upskilling commitment. Overall, 33.3% of respondents who agreed with job displacement agreed with insufficient upskilling commitment. This highlights a potential correlation between job displacement and a perceived lack of commitment to upskilling.

**Interpretation:**

The results of the cross-tabulation reveal a clear association between job displacement or layoffs caused by the implementation of new technology and the perception of inadequate commitment from employers in terms of upskilling and training opportunities. A significant proportion of respondents who experienced or witnessed job displacement also indicated a belief that their employers did not provide sufficient support for acquiring the necessary skills to keep up with evolving technology. These results emphasize the importance for organizations to prioritize investment in upskilling programs to address employee concerns and ensure a smooth transition in the face of technological advancements.

#### 4.4.10. Connection between employer's upskilling commitment, training opportunities, and workplace cultural shifts.

Table No. 4.4.10.

Source: Primary Data

19. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry. * 14. There have been positive changes in workplace culture as a result of upskilling initiatives.						
		14. There have been positive changes in workplace culture as a result of upskilling initiatives.				Total
		Strongly Agree	Agree	Somewhat Agree	Disagree	
19. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.	Strongly Agree	9	2	1	0	12
	Agree	7	19	4	0	30
	Somewhat Agree	4	14	5	0	23
	Disagree	6	3	1	0	10
	Strongly Disagree	4	0	0	1	5
Total		30	38	11	1	80

Inference:

Among the respondents, 37.5% strongly agree and 23.75% agree that there have been positive changes in workplace culture due to upskilling initiatives. Conversely, 12.5% disagree or strongly disagree with this statement. The results highlight a significant association between



the perceived insufficiency of upskilling commitment and the perception of positive changes in workplace culture.

Interpretation:

The results of the analysis imply a notable relationship between the perception of employers' insufficient commitment to upskilling and the perception of positive changes in workplace culture as a result of upskilling initiatives. A significant proportion of respondents who strongly agree or agree that their employers lack commitment to upskilling also acknowledge positive changes in workplace culture. This understanding highlights the importance of employers' commitment to upskilling in fostering a positive work environment.

**4.4.11. Analysis of the Orientation of Training Practices with Technology Changes and Employee Opinion to Upskilling Commitment.**

Table No. 4.4.11.

Source: Primary Data

2. My organization ensures adequate training is provided in tandem with technology changes. * 19. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.			19. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.					Total
			Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree	
2.	My organization ensures adequate	Strongly Agree	10	13	9	4	4	40
		Agree	2	14	11	6	1	34

training is provided in tandem with technology changes.	Somewhat Agree	0	1	2	0	0	3
	Disagree	0	2	0	0	0	2
	Strongly Disagree	0	0	1	0	0	1
Total		12	30	23	10	5	80

**Inference:**

Among the respondents, 47.5% strongly agree and 42.5% agree that their organization ensures adequate training in tandem with technology changes. These two categories combined account for the majority of the responses, with a total of 90% favouring the organization's commitment to upskilling and training opportunities. In contrast, only 3.75% somewhat agree, and no respondents disagree or strongly disagree with this statement. These results indicate a positive perception of the organization's efforts in providing training aligned with technology changes.

**Interpretation:**

The data reveals that a significant majority of respondents (90%) have a positive perception of their organization's commitment to upskilling and training opportunities aligned with technology changes. This indicates that these organizations prioritize providing adequate training to employees to keep up with the rapidly evolving technology in the industry. However, a small percentage (3.75%) express some level of dissatisfaction with the employer's commitment. This highlights the need for organizations to continuously assess and enhance their upskilling efforts to ensure employees feel supported in navigating technological advancements.

**4.5 Chi-Square Test**

The chi-square test, utilized in this dissertation, is a statistical method used to determine if there is a significant association between two categorical variables. By comparing observed and

expected frequencies, the test assesses the independence or dependence of variables. This analysis provides valuable insights into the relationship between variables, contributing to a comprehensive understanding of the research topic.

#### 4.5.1. Chi-square test between Demand for Upskilling and Prominence of Technology

Table No. 4.5.1.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	245.694 <sup>a</sup>	221	.122
Likelihood Ratio	172.533	221	.993
Linear-by-Linear Association	10.981	1	.001
N of Valid Cases	80		

a. 252 cells (100.0%) have expected count less than 5. The minimum expected count is .01.

The Linear-by-Linear Association test yielded a p-value of .001, suggesting a weak linear relationship between the variables.

#### 4.5.2. Chi-square test between Demand for Upskilling and Inclusionary Practices

Table No. 4.5.2.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	80.000 <sup>a</sup>	17	.000
Likelihood Ratio	18.705	17	.346
Linear-by-Linear Association	17.870	1	.000

N of Valid Cases	80		
a. 29 cells (80.6%) have expected count less than 5. The minimum expected count is .03.			

The chi-square tests revealed a strong and significant relationship between demand for upskilling and Inclusionary practices in Organisations. ( $p < .001$ ), indicating that the variables are closely related.

#### 4.5.3. Chi-square test between Inclusionary Practices and Prominence of Technology

Table No. 4.5.3.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	302.146 <sup>a</sup>	255	.023
Likelihood Ratio	190.964	255	.999
Linear-by-Linear Association	10.716	1	.001
N of Valid Cases	80		
a. 288 cells (100.0%) have expected count less than 5. The minimum expected count is .01.			

The results indicated that there was a significant association between the variables based on the Pearson Chi-Square test ( $p = .023$ ). The Linear-by-Linear Association test revealed a weak linear relationship ( $p = .001$ ).

#### 4.5.4. Chi-square test to find Technology's Impact on Job Demands and Employer's Upskilling Commitment.

Table No. 4.5.4.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.157 <sup>a</sup>	12	.005
Likelihood Ratio	24.821	12	.016
Linear-by-Linear Association	9.343	1	.002
N of Valid Cases	80		

a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .13.

The results of the statistical tests indicated that there is a meaningful relationship between the variables. Both the Pearson Chi-Square test ( $p = .005$ ) and the Likelihood Ratio test ( $p = .016$ ) showed significant associations. Additionally, the Linear-by-Linear Association test demonstrated a significant linear relationship ( $p = .002$ ). These findings suggest that the variables under investigation are not independent and that there is a notable connection between them.

#### 4.5.5. Chi-square test to find the Impact of Technological Advancements on Job Demands and Upskilling Challenges in HR.

Table No. 4.5.5.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.169 <sup>a</sup>	12	.002
Likelihood Ratio	23.651	12	.023
Linear-by-Linear Association	5.829	1	.016
N of Valid Cases	80		

a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is .03.

Based on the Pearson Chi-Square test ( $p = .002$ ) and the Likelihood Ratio test ( $p = .023$ ), there is evidence of a relationship. The Linear-by-Linear Association test also shows a significant linear relationship ( $p = .016$ ). These results put forward that there is a meaningful connection between the variables being analysed.

#### 4.5.6. Chi-square test to find the View of Upskilling Demand and the Impact of New Technology in the Workplace.

Table No. 4.5.6.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.013 <sup>a</sup>	12	.006
Likelihood Ratio	27.994	12	.006

Linear-by-Linear Association	9.546	1	.002
N of Valid Cases	80		
a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is .04.			

The chi-square test results indicate a significant association between the Demand for Upskilling and the Prominence of Technology in the workplace. The Pearson Chi-Square test ( $p = .006$ ) and the Likelihood Ratio test ( $p = .006$ ) both support this finding. Additionally, the Linear-by-Linear Association test reveals a significant linear relationship ( $p = .002$ ).

#### 4.5.7. Chi-square test to find the Impact of New Technology on Job Displacement and Employer's Commitment to Upskilling.

Table No. 4.5.7.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.841 <sup>a</sup>	16	.000
Likelihood Ratio	46.702	16	.000
Linear-by-Linear Association	17.390	1	.000
N of Valid Cases	80		
a. 20 cells (80.0%) have expected count less than 5. The minimum expected count is .44.			

The chi-square tests revealed highly significant results, indicating a strong relationship between the variables. Both the Pearson Chi-Square test ( $p < .001$ ) and the Likelihood Ratio test ( $p <$

.001) demonstrated significant associations. The Linear-by-Linear Association test also showed a significant linear relationship ( $p < .001$ ).

#### 4.5.8. Chi-square test to find The Impact of New Technology Implementation and Upskilling on Work Ease and Job Security in a Technology-Driven Environment.

Table No. 4.5.8.

Source: Primary Data

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.774 <sup>a</sup>	9	.000
Likelihood Ratio	23.352	9	.005
Linear-by-Linear Association	7.627	1	.006
N of Valid Cases	80		

a. 11 cells (68.8%) have expected count less than 5. The minimum expected count is .04.

The Pearson Chi-Square test yielded a value of 42.774 with 9 degrees of freedom ( $p < .001$ ), suggesting a strong relationship between the variables. The Likelihood Ratio test also showed a significant result ( $p = .005$ ), further supporting the association. The Linear-by-Linear Association test yielded a value of 7.627 ( $p = .006$ ), indicating a linear relationship between the variables. These results put forward that there is a meaningful connection between the variables under investigation

#### 4.5.9. Chi-square test to find The Relationship between Employer's Commitment to Upskilling and Training Opportunities and Workplace Culture Changes.

Table No. 4.5.9.

Source: Primary Data

Chi-Square Tests
------------------



	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37.332 <sup>a</sup>	12	.000
Likelihood Ratio	30.560	12	.002
Linear-by-Linear Association	.157	1	.692
N of Valid Cases	80		

a. 15 cells (75.0%) have expected count less than 5. The minimum expected count is .06.

The Pearson Chi-Square test yielded a p-value of .000, indicating a highly significant association. Similarly, the Likelihood Ratio test also showed a significant result with a p-value of .002. However, the Linear-by-Linear Association test did not yield a significant result ( $p = .692$ ). These results imply that there is a strong relationship between the variables, indicating a connection between the employer's commitment to upskilling and training opportunities and the positive changes in workplace culture.

#### **4.5.10. Chi-square test to find The Relationship between Employer's Commitment to Upskilling and Training Opportunities and Workplace Culture Changes.**

Table No. 4.5.10.

Source: Primary Data

<b>Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.157 <sup>a</sup>	12	.005
Likelihood Ratio	24.821	12	.016
Linear-by-Linear Association	9.343	1	.002

N of Valid Cases	80		
a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .13.			

The results of the chi-square tests indicate a significant association between the variables. The Pearson Chi-Square test ( $p = .005$ ) and the Likelihood Ratio test ( $p = .016$ ) both support this finding. The Linear-by-Linear Association test also reveals a significant linear relationship ( $p = .002$ ). These results put forward that there is a meaningful connection between the variables being studied.

## **4.6 Mean Score**

### **4.6.1. Analysis of Mean Score of responses towards Inclusionary Practices of Organisations, Demand for Upskilling and Prominence of Technology.**

Table No. 4.6.1.

Source: Primary Data

<b>Report</b>		
<b>Inclusionary Practices</b>	1.86	Agree
<b>Demand for upskilling</b>	1.95	Agree
<b>The prominence of new technology</b>	2.31	Agree

Based on the above results, it seems that the respondents agree that there is a demand for upskilling and that new technology is prominent. However, the level of agreement for Inclusionary Practices is lower than the other two categories. This could indicate that there is room for improvement in this area.

The means generated here is the number as the Mean Score of responses towards the particular question. From the mean score, one can say that the prominence of new technology, the more people feel that technology is prominent, it is perceived by a majority of the respondents as a very higher order reality, when they compare their organisation, the organization's practises of

inclusion, demand for upskilling is there. But that demand is felt or experienced by these people with the mean score, which is less than the booming technology upgradation it's not up to, so from that I have to put this table did it.

**CHAPTER 5**  
**FINDINGS, SUGGESTIONS AND CONCLUSION**

## **5.1 INTRODUCTION**

This chapter discusses the important findings and conclusion of the study. The major objective of the study was to understand whether the HR professionals see the technology in their work as a boon or bane. The study was conducted among 80 respondents who are HR professionals from across Kerala.

## **5.2 FINDINGS**

The research findings section is where the researcher outlines the study's findings based on the data gathered as a consequence of various tools and techniques of analysis employed. The researcher made an effort to respond queries posed at the initial stages of the research while summarising them into findings. This section only presents the results, without bias or interpretation, and is logically ordered or formatted in accordance with specific objectives of this study. The purpose of the study was to understand whether HR professionals see the technology advancement a threat to their job as well as the prominence of new technology at work by the HR employees. The research tool used was a questionnaire comprises of 24 questions prepared to find the Inclusionary Practices towards technology advancement, the demand for upskilling and the prominence of new technology. The researcher was able to report the following findings through this research.

1. The participation of respondents in the study was found to be indicative of the three sectors namely IT, Manufacturing, and Service. Among the 80 respondents, 42 were male and 38 were female. This constitutes a percentage of 47.5 % female and 52.5 % male respondents in the sample drawn from population under study.
2. Type of organisation where respondents work in the sample shows, 35% from IT sector, 16.3% are from manufacturing sector, and 48.8% are from service sector. This indicates that majority of respondents work in the service sector, followed by IT sector and manufacturing sector.
3. It is found that in terms of annual salary distribution among the participants, the majority (40%) fall into the category of above 5 lakhs annually, followed by the range of 3 lakhs (35%) and the range between 3-5 lakhs (25%).
4. Educational qualifications among the respondents shows that majority (79%) hold degrees graduation, while 21% have qualifications below graduation. This indicates a

diverse educational makeup, with a noteworthy proportion holding degrees above graduation level.

5. It is found substantial employee dissatisfaction with organizational training for technological changes. 92.5% disagree or strongly disagree that their organization provides adequate training in response to technology changes.
6. Findings indicate mixed opinions on employer upskilling commitment amid rapid technology changes. The result showed 18.8% find the commitment insufficient, 67.5% disagree, and the results underscore a need for enhanced employer commitment to comprehensive upskilling and training opportunities.
7. It is found that a significant majority (92.5%) of employees have a positive perception of their organization's provision of adequate training related to technological changes. This indicates these organizations prioritize equipping employees with skills to adapt to evolving technologies.
8. It is found that a significant majority (96.3%) believe their organization takes initiative to upskill employees, thereby reducing fear of job loss. This indicates a positive perception of the organization's commitment to invest in professional development and future-proof careers.
9. It is found that a significant portion (78.8%) agree HR employees face high risk of job replacement by technology, indicating concern about automation of repetitive HR roles.
10. It is found that majority (87.5%) agree that upskilling has increased job security in a technology-driven environment, indicating employees perceive upskilling as valuable for enhancing job security amid rapid advancements. This shows the recognition of continuously upgrading skills to adapt to changing demands and protect employment.
11. It is found that majority (88.8%) agree upskilling programs effectively reduce the gap between new technology and lack of skills. The high agreement reflects perceived value of upskilling programs. Prioritizing upskilling can lead to smoother transitions during tech advancements, increasing employee competence and productivity.
12. It is found that most of the respondents (98.8%) agree to the fact that, their organization strives to integrate technology while ensuring a seamless transition for employees until superannuation, highlighting organization's commitment to embracing technology while prioritizing employee well-being and development.
13. It is found that 36% of IT sector, 92% manufacturing sector, and 72% of service sector reporting high prominence of technology respectively. This indicates manufacturing

has the highest percentage with high technology prominence, followed by service and IT sectors.

14. It is found that in IT sector 35%, in manufacturing sector (16% of the sample) exhibited 100% high inclusionary practices and in service sector with 95% reporting high engagement, displayed strong inclusionary practices. Organizations are evidently prioritizing inclusive strategies, particularly through upskilling measures, to foster sustainable employee retention.
15. It is found that, 36% in the IT sector perceive high demand for upskilling followed by manufacturing, 69% and service sector, with 62% of demand. This indicates the service sector has the highest percentage, recognizing the need for upskilling.
16. It is found that influence of technology on job requirements and employer's dedication to upskilling, majority (60%) are of the opinion that increased workplace technology usage has made their jobs more demanding. Additionally, 47.5% feel their employer's commitment to upskilling and training is insufficient to keep pace with rapidly changing technology.
17. It is found that respondents sees implementing upskilling initiatives in HR departments as challenging, despite recognizing the benefits. This suggests a gap between employees' aspirations to enhance skills and organizational support provided.
18. It is found that majority (82.5%) feel that they have no ease of work without feeling threatened by new tech. Thus, most respondents do not perceive new technology implementation as enabling ease of work without being threatening.
19. It is found that a majority (58.75%) agree upskilling has increased job security in a technology-driven environment.
20. It is found that 55.6% strongly agreed with displacement also strongly agreed with insufficient upskilling. Additionally, 33.3% agreeing with displacement shared the same perspective on upskilling. So it is found that insufficient upskilling leads to displacement/ layoff from job.
21. Findings indicate that 61.25% sees positive workplace culture changes have resulted from upskilling initiatives. A connection is observed between perceived inadequate upskilling commitment and recognition of positive cultural shifts.
22. Findings reveal that a significant majority, believe their organization offers adequate training aligned with technological shifts, reflecting strong support for the organization's commitment to upskilling and training.
23. The analysis of mean scores shows:

- Respondents agree there is demand for upskilling and new technology is prominent.
- Agreement for inclusionary practices is lower than the demand for upskilling and prominence of technology.
- The mean score indicates most respondents perceive technology as highly prominent compared to their organizations.
- Demand for upskilling is felt but not as high as the pace of technological advancement.

Thus it is found that respondents see rapidly advancing technology as very prominent, while organizational inclusionary practices and upskilling demand are lagging behind somewhat.

24. It is found that the Chi-square test between Demand for Upskilling and Inclusionary Practices revealed a strong and significant relationship ( $p < .001$ ), indicating the variables are closely related.
25. The Chi-square test showed a significant association between Inclusionary Practices and Prominence of Technology ( $p < .05$ ).
26. It is found that the Chi-square test results indicate a meaningful relationship between Technology's Impact on Job Demands and Employer's Upskilling Commitment. The Pearson Chi-Square ( $p = .005$ ) tests reveal significant association. The Linear-by-Linear Association test showed a significant linear relationship ( $p = .002$ ). The findings indicate variables have a notable connection and are not independent.
27. It is found that the Chi-square test results indicate a relationship between the Impact of Technological Advancements on Job Demands and Upskilling Challenges in HR. The Pearson Chi-Square test ( $p = .002$ ) revealed significant result. This proposes a meaningful connection exists between the variables analyzed.
28. It is found that the Chi-square test results indicate a significant association between the View of Upskilling Demand and the Impact of New Technology in the Workplace. The Linear-by-Linear Association test revealed a significant linear relationship ( $p = .002$ ).
29. It is found that the Chi-square test results reveal a strong relationship between the Impact of New Technology on Job Displacement and Employer's Commitment to Upskilling. The Pearson Chi-Square ( $p < .001$ ) and Likelihood Ratio ( $p < .001$ ) tests showed highly significant associations. The Linear-by-Linear Association test also indicated a significant linear relationship ( $p < .001$ ).



30. The analysis showed that the Chi-square test to find The Impact of New Technology Implementation and Upskilling on ease of work and job security in technology-driven environment yielded a Pearson Chi-Square value of 42.774 with 9 degrees of freedom ( $p < .001$ ), indicating a strong relationship between the variables. The significant Likelihood Ratio test result ( $p = .005$ ) further supported this association. These results shows there is a meaningful connection between the variables examined.
31. The analysis found a highly significant association between new technology implementation, upskilling, ease of work, and job security in technology-driven environment. The Chi-square test yielded a Pearson Chi-Square p-value of .000, while the Likelihood Ratio test resulted in a p-value of .002. These outcomes indicate a robust relationship between the variables, highlighting the connection between employer upskilling commitment and positive workplace culture changes.
32. It is found that the Chi-square test results indicate a significant association between the relationship between employer's commitment to upskilling and training opportunities and workplace culture changes. The Pearson Chi-Square ( $p = .005$ ) tests support this finding. The Linear-by-Linear Association test also revealed a significant linear relationship ( $p = .002$ ). These results suggest there is a meaningful connection between the variables studied.

### **5.3 SUGGESTIONS**

1. A large proportion of respondents expressed disagreement on the adequacy of training provided to cope with technology changes. Therefore it is suggested that there is a need for improved training initiatives to align with the evolving technological landscape.
2. Employers should proactively expand continuous learning opportunities across all roles to address concerns around insufficient upskilling. This will enable employees to stay competitive as industry technology rapidly evolves.
3. To address concerns about automation replacing HR roles, organizations should upskill employees by developing programs focused on less automatable skills like critical thinking, empathy, and change management.
4. A large portion of the respondents expressed that upskilling programs effectively reduce gap between new technology and lack of skills. This suggests investing in upskilling can benefit by equipping employees with skills to adapt to evolving technology.
5. To avoid job displacement concerns, organizations should proactively invest in continuous upskilling programs for all employees, not just those impacted by layoffs,

to foster a culture of lifelong learning and smooth transitions amid technological change.

6. Proactively upskill HR employees in less automatable areas and implement transitional workforce strategies to demonstrate commitment to supporting employees through job displacement disruptions caused by automation.
7. A large proportion of employees feel that despite the advantages introduction of new tech in HR brings, it makes their job more demanding. These insights suggest the need to address upskilling implementation challenges and provide adequate support to help employees manage the changing technology landscape.

## **5.4 CONCLUSION**

When it comes to adopting new technologies, it's not really clear if employees feel the pressure as a threat or an opportunity. The majority of HR professionals surveyed as part of this research study IT, manufacturing and service sectors share in common that technology advancements are prominent in their workplaces. And there's a growing demand to keep their skills up-to-date with the changes.

The major intention behind the study was to uncover whether HR professionals see the advent of technology as a threat or an opportunity. It is found from the study that HR people are aware of the threat if they don't upskill with the change in technology. They are also in agreement with the statement that their updation of skills has reduced displacement and layoffs in their jobs. It is proved from the study that employees are worried about their job security due to rapid technological change and the commitment on the part of the employer to providing upskilling programmes and securing their job.

The research aimed to examine organizational inclusionary practices, employee demand for upskilling, and the prominence and impact of new technologies in the workplace. The findings reveal that while advanced technologies are highly prominent across sectors, inclusionary practices and upskilling initiatives are lagging behind the pace of technological change.

The study suggests there is ample room for improvement in organizational training and upskilling programs to better prepare employees for evolving skill demands. While employees recognize the benefits of upskilling, gaps remain between aspiration and actual skill development support.

Targeted upskilling initiatives focused on automatable job roles and change management competencies are recommended. Enhanced commitment from employers to provide

comprehensive, continuous training is needed to proactively close skills gaps. This will enable smoother adoption of new technologies while supporting employee job security and workplace culture.

Overall, the research underscores the importance of organizational inclusion, upskilling, and human-centric technology adoption. As rapid digital transformation continues across industries, synergistic integration of new technologies together with employee empowerment and capability building will be critical. Organizations that purposefully invest in their workforce will be best positioned for sustainable growth in an increasingly technology-driven world.

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## **APPENDIX**



Hello there,

I am Abeeraj K A, pursuing final year of MA HRM at Loyola College of Social Sciences, Trivandrum. I am conducting a research on "Upskilling as an essential pre-requisite in the technology driven environment."

It would be great help if you could spare 5 minutes of your time to fill the form. All responses will be kept confidential and anonymous.

Thank you so much for your attention and participation.

Five point Likert scale of strongly agree, agree, somewhat agree, disagree and strongly disagree are used.

The questions are as follows:

1. Present Salary?
  - a. Below 3 lakhs
  - b. Between 3-5 lakhs
  - c. Above 5 lakhs
2. Gender?
  - a. Male
  - b. Female
  - c. Other
3. Educational qualification?
  - a. Diploma
  - b. Bachelor's Degree
  - c. Professional Degree
  - d. PG
4. Type of organisation
  - a. IT
  - b. Manufacturing

- c. Service
5. With digital technology evolving rapidly, it is important for my organization to plan for the existence of present employees.
    - a. Strongly Agree
    - b. Agree
    - c. Somewhat Agree
    - d. Disagree
    - e. Strongly disagree
  6. My organization ensures adequate training is provided in tandem with technology changes.
    - a. Strongly Agree
    - b. Agree
    - c. Somewhat Agree
    - d. Disagree
    - e. Strongly disagree
  7. My organization has implemented a practice for training and development that involves continuous monitoring and feedback.
    - a. Strongly Agree
    - b. Agree
    - c. Somewhat Agree
    - d. Disagree
    - e. Strongly Disagree
  8. My organization takes the initiative to upskill its employees to eliminate the fear of job loss.
    - a. Strongly Agree
    - b. Agree
    - c. Somewhat Agree
    - d. Disagree
    - e. Strongly Disagree

9. The training and development provided by my organization results in better inclusion as employees become more familiar with the technology.
  - a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
10. My organization sees new technology as employee enablers, not as replacements.
  - a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
11. My organization strives to integrate new technology while ensuring a seamless transition for existing employees until their superannuation.
  - a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
12. In certain instances, it is more practical for my organization to consider alternative methods of labor over human employment, if it proves to be a more suitable option for specific job tasks.
  - a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
13. In my organization, involuntary upskilling initiatives are implemented.

- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
14. To survive in a job where technology is changing the status quo, upskilling is becoming increasingly demanding.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
15. I feel pressure to upskill in my job due to rapidly changing technology.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
16. The introduction of technology has led to concerns about job security in some roles.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
17. Upskilling programs are effective in reducing the gap between new technology changes and employee's lack of skill sets.
- a. Strongly Agree
  - b. Agree

- c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
18. There have been positive changes in workplace culture as a result of upskilling initiatives.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
19. Upskilling has increased job security in a technology-driven environment.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
20. Integration of new technologies has become a practice in my job roles.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
21. Implementing upskilling initiatives in the HR department is challenging, despite the benefits they offer in helping employees stay competitive in a technology-driven work environment.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree

- e. Strongly Disagree
22. The increasing use of technology in the workplace has made the job more demanding.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
23. I feel my employer's commitment to upskilling and training opportunities is insufficient to keep up with the rapidly changing technology in the industry.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
24. I believe that the implementation of new technology has led to increased productivity among the workers.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
25. Job displacement or layoffs have been experienced or witnessed as a result of the implementation of new technology.
- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree

26. There is a higher risk of job replacement by technology for HR employees as most of the job roles are repetitive in nature and can be automated.

- a. Strongly Agree
- b. Agree
- c. Somewhat Agree
- d. Disagree
- e. Strongly Disagree

27. Implementation of new technology has resulted in ease of doing work, therefore not a threat.

- a. Strongly Agree
  - b. Agree
  - c. Somewhat Agree
  - d. Disagree
  - e. Strongly Disagree
-